PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Assistant Commissioner for Patents
United States Patent and Trademark Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 15 June 2000 (15.06.00)	
International application No. PCT/US99/25508	**Applicant's or agent's file reference** 8001.107/10
International filing date (day/month/year) 29 October 1999 (29.10.99)	**Priority date** (day/month/year) 29 October 1998 (29.10.98)
Applicant DUTTA, Rana et al	

1. The designated Office is hereby notified of its election made:

[X] in the demand filed with the International Preliminary Examining Authority on:

08 May 2000 (08.05.00)

[ ] in a notice effecting later election filed with the International Bureau on:

2. The election [X] was

[ ] was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO **34, chemin des Colombettes** **1211 Geneva 20, Switzerland**	Authorized officer C. Cupello
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

WO 00/26842
PCT/US99/25508

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

To:
YIP, Alex, L.
Londa and Traub LLP
37th floor
20 Exchange Place
New York, NY 10005
ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year) 11 May 2000 (11.05.00)	
Applicant's or agent's file reference 8001.107/10	**IMPORTANT NOTICE**

International application No.	**International filing date** (day/month/year)	**Priority date** (day/month/year)
PCT/US99/25508	29 October 1999 (29.10.99)	29 October 1998 (29.10.98)

Applicant
ASCOM HASLER MAILING SYSTEMS, INC. et al

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:
   AU,CN,JP,KP,KR,US

   In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:
   AE,AL,AM,AP,AT,AZ,BA,BB,BG,BR,BY,CA,CH,CU,CZ,DE,DK,EA,EE,EP,ES,FI,GB,GD,GE,GH,GM,
   HR,HU,ID,IL,IN,IS,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MD,MG,MK,MN,MW,MX,NO,NZ,OA,PL,PT,
   RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TR,TT,UA,UG,UZ,VN,YU,ZA,ZW
   The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on
   11 May 2000 (11.05.00) under No. WO 00/26842

REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, **a demand for international preliminary examination** must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the **national phase**, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer
J. Zahra

Telephone No. (41-22) 338.83.38

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION CONCERNING SUBMISSION OR TRANSMITTAL OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

To:

YIP, Alex, L.
Londa & Traup LLP
37th floor
20 Exchange Place
New York, NY 10005
ÉTATS-UNIS D'AMÉRIQUE

Date of mailing (day/month/year) 10 January 2000 (10.01.00)	
Applicant's or agent's file reference 8001.107/10	**IMPORTANT NOTIFICATION**
International application No. PCT/US99/25508	International filing date (day/month/year) 29 October 1999 (29.10.99)
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 29 October 1998 (29.10.98)
Applicant ASCOM HASLER MAILING SYSTEMS, INC. et al	

1. The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).

2. This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.

3. An asterisk(*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

4. The **letters "NR"** appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

Priority date	Priority application No.	Country or regional Office or PCT receiving Office	Date of receipt of priority document
29 Octo 1998 (29.10.98)	60/106,066	US	28 Dece 1999 (28.12.99)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer

Taïeb Akremi

Telephone No. (41-22) 338.83.38

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF RECEIPT OF RECORD COPY

(PCT Rule 24.2(a))

To:

YIP, Alex, L.
Londa & Traup LLP
37th floor
20 Exchange Place
New York, NY 10005
ÉTATS-UNIS D'AMÉRIQUE

Date of mailing (day/month/year)	**IMPORTANT NOTIFICATION**
03 January 2000 (03.01.00)	
Applicant's or agent's file reference	**International application No.**
8001.107/10	PCT/US99/25508

The applicant is hereby notified that the International Bureau has received the record copy of the international application as detailed below.

Name(s) of the applicant(s) and State(s) for which they are applicants:

ASCOM HASLER MAILING SYSTEMS, INC. (for all designated States except US)
DUTTA, Rana et al (for US)

International filing date	:	29 October 1999 (29.10.99)
Priority date(s) claimed	:	29 October 1998 (29.10.98)
Date of receipt of the record copy by the International Bureau	:	17 December 1999 (17.12.99)
List of designated Offices	:	

AP :GH,GM,KE,LS,MW,SD,SL,SZ,TZ,UG,ZW
EA :AM,AZ,BY,KG,KZ,MD,RU,TJ,TM
EP :AT,BE,CH,CY,DE,DK,ES,FI,FR,GB,GR,IE,IT,LU,MC,NL,PT,SE
OA :BF,BJ,CF,CG,CI,CM,GA,GN,GW,ML,MR,NE,SN,TD,TG
National :AE,AL,AM,AT,AU,AZ,BA,BB,BG,BR,BY,CA,CH,CN,CU,CZ,DE,DK,EE,ES,FI,GB,GD,GE,GH,GM,HR,HU,ID,IL,IN,IS,JP,KE,KG,KP,KR,KZ,LC,LK,LR,LS,LT,LU,LV,MD,MG,MK,MN,MW,MX,NO,NZ,PL,PT,RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TR,TT,UA,UG,US,UZ,VN,YU,ZA,ZW

ATTENTION

The applicant should carefully check the data appearing in this Notification. In case of any discrepancy between these data and the indications in the international application, the applicant should immediately inform the International Bureau.

In addition, the applicant's attention is drawn to the information contained in the Annex, relating to:

- [X] time limits for entry into the national phase
- [X] confirmation of precautionary designations
- [X] requirements regarding priority documents

A copy of this Notification is being sent to the receiving Office and to the International Searching Authority.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer:

Athina Nickitas-Etienne

Telephone No. (41-22) 338.83.38

INFORMATION ON TIME LIMITS FOR ENTERING THE NATIONAL PHASE

The applicant is reminded that the "national phase" must be entered before each of the designated Offices indicated in the Notification of Receipt of Record Copy (Form PCT/IB/301) by paying national fees and furnishing translations, as prescribed by the applicable national laws.

The time limit for performing these procedural acts is **20 MONTHS** from the priority date or, for those designated States which the applicant elects in a demand for international preliminary examination or in a later election, **30 MONTHS** from the priority date, provided that the election is made before the expiration of 19 months from the priority date. Some designated (or elected) Offices have fixed time limits which expire even later than 20 or 30 months from the priority date. In other Offices an extension of time or grace period, in some cases upon payment of an additional fee, is available.

In addition to these procedural acts, the applicant may also have to comply with other special requirements applicable in certain Offices. **It is the applicant's responsibility** to ensure that the necessary steps to enter the national phase are taken in a timely fashion. Most designated Offices do not issue reminders to applicants in connection with the entry into the national phase.

For detailed information about the procedural acts to be performed to enter the national phase before each designated Office, the applicable time limits and possible extensions of time or grace periods, and any other requirements, see the relevant Chapters of Volume II of the PCT Applicant's Guide. Information about the requirements for filing a demand for international preliminary examination is set out in Chapter IX of Volume I of the PCT Applicant's Guide.

GR and ES became bound by PCT Chapter II on 7 September 1996 and 6 September 1997, respectively, and may, therefore, be elected in a demand or a later election filed on or after 7 September 1996 and 6 September 1997, respectively, regardless of the filing date of the international application. (See second paragraph above.)

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

CONFIRMATION OF PRECAUTIONARY DESIGNATIONS

This notification lists only specific designations made under Rule 4.9(a) in the request. It is important to check that these designations are correct. Errors in designations can be corrected where precautionary designations have been made under Rule 4.9(b). The applicant is hereby reminded that any precautionary designations may be confirmed according to Rule 4.9(c) before the expiration of 15 months from the priority date. If it is not confirmed, it will automatically be regarded as withdrawn by the applicant. There will be no reminder and no invitation. Confirmation of a designation consists of the filing of a notice specifying the designated State concerned (with an indication of the kind of protection or treatment desired) and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.

REQUIREMENTS REGARDING PRIORITY DOCUMENTS

For applicants who have not yet complied with the requirements regarding priority documents, the following is recalled.

Where the priority of an earlier national, regional or international application is claimed, the applicant must submit a copy of the said earlier application, certified by the authority with which it was filed ("the priority document") to the receiving Office (which will transmit it to the International Bureau) or directly to the International Bureau, before the expiration of 16 months from the priority date, provided that any such priority document may still be submitted to the International Bureau before that date of international publication of the international application, in which case that document will be considered to have been received by the International Bureau on the last day of the 16-month time limit (Rule 17.1(a)).

Where the priority document is issued by the receiving Office, the applicant may, instead of submitting the priority document, request the receiving Office to prepare and transmit the priority document to the International Bureau. Such request must be made before the expiration of the 16-month time limit and may be subjected by the receiving Office to the payment of a fee (Rule 17.1(b)).

If the priority document concerned is not submitted to the International Bureau or if the request to the receiving Office to prepare and transmit the priority document has not been made (and the corresponding fee, if any, paid) within the applicable time limit indicated under the preceding paragraphs, any designated State may disregard the priority claim, provided that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity to furnish the priority document within a time limit which is reasonable under the circumstances.

Where several priorities are claimed, the priority date to be considered for the purposes of computing the 16-month time limit is the filing date of the earliest application whose priority is claimed.

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No. PCT/US 99/25508

International Filing Date (29.10.99) 29 OCT 1999

Name of receiving Office and "PCT International Application" PCT INTERNATIONAL APPLICATION RO/US

Applicant's or agent's file reference *(if desired) (12 characters maximum)* 8001.107/10

Box No. I TITLE OF INVENTION

METHOD AND SYSTEM FOR SHIPPING/MAILING

Box No. II APPLICANT

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

Ascom Hasler Mailing Systems, inc
19 Forest Parkway
Shelton, Connecticut 06484-0904

United States of America

☐ This person is also inventor.

Telephone No. 203-926-1087

Facsimile No. 203-926-0203

Teleprinter No.

State *(that is, country)* of nationality: US

State *(that is, country)* of residence: US

This person is applicant for the purposes of: ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

DUTTA, Rana
367 Waverly Road
Shelton, Connecticut 06484

United States of America

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only *(If this check-box is marked, do not fill in below.)*

State *(that is,country)* of nationality: US

State *(that is, country)* of residence: US

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: ☐ agent ☐ common representative

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

YIP, Alex L.
BUSINGER, Peter A.
Londa and Traub LLP
20 Exchange Place, 37th Floor
New York, New York 10005

United States of America

Telephone No. 212-968-1300

Facsimile No. 212-968-1307

Teleprinter No.

☐ **Adress for correspondence:** Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Continuation of Box No. III FURTHER APPLICANTS AND/OR (FURTHER) INVENTORS

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

ESKANDARI, Fetneh
144 Dove Lane
Middletown, Connecticut 06457

United States of America

This person is:
- ☐ applicant only
- ☒ applicant and inventor
- ☐ inventor only *(If this check-box is marked, do not fill in below.)*

State *(that is, country)* of nationality: Iran

State *(that is, country)* of residence: US

This person is applicant for the purposes of:
- ☐ all designated States
- ☐ all designated States except the United States of America
- ☒ the United States of America only
- ☐ the States indicated in the Supplemental Box

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

LEIRER, Thomas C.
2705 Denian Court
Kennesaw, Georgia 30152

United States of America

This person is:
- ☐ applicant only
- ☒ applicant and inventor
- ☐ inventor only *(If this check-box is marked, do not fill in below.)*

State *(that is, country)* of nationality: US

State *(that is, country)* of residence: US

This person is applicant for the purposes of:
- ☐ all designated States
- ☐ all designated States except the United States of America
- ☒ the United States of America only
- ☐ the States indicated in the Supplemental Box

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

MATTERN, James M.
755 South Brooskvale Road
Cheshire, Connecticut 06410

United States of America

This person is:
- ☐ applicant only
- ☒ applicant and inventor
- ☐ inventor only *(If this check-box is marked, do not fill in below.)*

State *(that is, country)* of nationality: US

State *(that is, country)* of residence: US

This person is applicant for the purposes of:
- ☐ all designated States
- ☐ all designated States except the United States of America
- ☒ the United States of America only
- ☐ the States indicated in the Supplemental Box

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

ROSEN, Richard H.
180 Merrimac Drive
Trumbull, Connecticut 06611

United States of America

This person is:
- ☐ applicant only
- ☒ applicant and inventor
- ☐ inventor only *(If this check-box is marked, do not fill in below.)*

State *(that is, country)* of nationality: US

State *(that is, country)* of residence: US

This person is applicant for the purposes of:
- ☐ all designated States
- ☐ all designated States except the United States of America
- ☒ the United States of America only
- ☐ the States indicated in the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on another continuation sheet.

FORM PCT/RO/101

4

PCT/US 99/25508

Box No. VI PRIORITY CLAIM ☐ Further priority claim is indicated in the Supplemental Box.

Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is: national application: country	regional application:* regional Office	international application: receiving Office
item (1) 29 OCT 1998 (29.10.98)	60/106,066	US		
item (2)				
item (3)				

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) *(only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office)* identified above as item(s): (1)

* *Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.*

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) *(if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):*

ISA / US

Request to use results of earlier search; reference to that search *(if an earlier search has been carried out by or requested from the International Searching Authority):*

Date *(day/month/year)* Number Country *(or regional Office)*

Box No. VIII CHECK LIST; LANGUAGE OF FILING

This international application contains the following **number of sheets:**

request	: 4
description (excluding sequence listing part)	: 12
claims	: 5
abstract	: 1
drawings	: 15
sequence listing part of description	:
Total number of sheets	: 37

This international application is **accompanied by** the item(s) marked below:

1. ☒ fee calculation sheet
2. ☐ separate signed power of attorney
3. ☐ copy of general power of attorney; reference number, if any:
4. ☐ statement explaining lack of signature
5. ☐ priority document(s) identified in Box No. VI as item(s):
6. ☐ translation of international application into (language):
7. ☐ separate indications concerning deposited microorganism or other biological material
8. ☐ nucleotide and/or amino acid sequence listing in computer readable form
9. ☐ other *(specify)*:

Figure of the drawings which should accompany the abstract: 1

Language of filing of the international application: English

Box No. IX SIGNATURE OF APPLICANT OR AGENT

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

Peter A. Businger

Peter A. Businger

(29.10.99)

For receiving Office use only

1. Date of actual receipt of the purported international application: 524 Rec'd PCT/PTO 29 OCT 1999

3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:

4. Date of timely receipt of the required corrections under PCT Article 11(2):

5. International Searching Authority (if two or more are competent): ISA / US

6. ☐ Transmittal of search copy delayed until search fee is paid.

Σ Drawings:

☐ received:

☐ not received:

For International Bureau use only

Date of receipt of the record copy by the International Bureau:

AFOUR

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

INFORMATION CONCERNING ELECTED OFFICES NOTIFIED OF THEIR ELECTION

(PCT Rule 61.3)

To:

YIP, Alex, L.
P.O. Box 67042
Flushing, NY 11367
ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year) 15 June 2000 (15.06.00)	
Applicant's or agent's file reference 8001.107/10	**IMPORTANT INFORMATION**

International application No.	**International filing date** (day/month/year)	**Priority date** (day/month/year)
PCT/US99/25508	29 October 1999 (29.10.99)	29 October 1998 (29.10.98)

Applicant
ASCOM HASLER MAILING SYSTEMS, INC. et al

1. The applicant is hereby informed that the International Bureau has, according to Article 31(7), notified each of the following Offices of its election:

   AP :GH,GM,KE,LS,MW,SD,SL,SZ,TZ,UG,ZW
   EP :AT,BE,CH,CY,DE,DK,ES,FI,FR,GB,GR,IE,IT,LU,MC,NL,PT,SE
   National :AU,BG,BR,CA,CN,CZ,DE,IL,JP,KP,KR,MN,NO,NZ,PL,RO,RU,SE,SK,US

2. The following Offices have waived the requirement for the notification of their election; the notification will be sent to them by the International Bureau only upon their request:

   EA :AM,AZ,BY,KG,KZ,MD,RU,TJ,TM
   OA :BF,BJ,CF,CG,CI,CM,GA,GN,GW,ML,MR,NE,SN,TD,TG
   National :AE,AL,AM,AT,AZ,BA,BB,BY,CH,CU,DK,EE,ES,FI,GB,GD,GE,GH,GM,HR,HU, ID,IN,IS,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MD,MG,MK,MW,MX,PT,SD,SG,SI,SL,TJ, TM,TR,TT,UA,UG,UZ,VN,YU,ZA,ZW

3. The applicant is reminded that he must enter the "national phase" **before the expiration of 30 months from the priority date** before each of the Offices listed above. This must be done by paying the national fee(s) and furnishing , if prescribed, a translation of the international application (Article 39(1)(a)), as well as, where applicable, by furnishing a translation of any annexes of the international preliminary examination report (Article 36(3)(b) and Rule 74.1).

   Some offices have fixed time limits expiring later than the above-mentioned time limit. For detailed information about the applicable time limits and the acts to be performed upon entry into the national phase before a particular Office, see Volume II of the PCT Applicant's Guide.

   The entry into the European regional phase is postponed **until 31 months from the priority date** for all States designated for the purposes of obtaining a European patent.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer:
C. Cupello

Telephone No. (41-22) 338.83.38

770P009584-WO(EQV)

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To: ALEX L. YIP
P.O. BOX 670425
FLUSHING, NY 11367

PCT

WRITTEN OPINION

(PCT Rule 66)

Date of Mailing *(day/month/year)*	25 OCT 2000
Applicant's or agent's file reference: 8001.107/10	REPLY DUE within TWO months from the above date of mailing

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US99/25508	29 OCTOBER 1999	29 OCTOBER 1998

International Patent Classification (IPC) or both national classification and IPC
IPC(7): G06F 153/00 and US Cl.: 705/401

Applicant
ASCOM HASLER MAILING SYSTEMS, INC.

1. This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

- I [X] Basis of the opinion
- II [ ] Priority
- III [ ] Non-establishment of opinion with regard to novelty, inventive step or industrial applicability
- IV [ ] Lack of unity of invention
- V [X] Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI [ ] Certain documents cited
- VII [ ] Certain defects in the international application
- VIII [ ] Certain observations on the international application

3. The applicant is hereby invited to reply to this opinion.

When? See the time limit indicated above. ~~The applicant may, before the expiration of that time limit, request this Authority to grant an extension., see Rule 66.2(d).~~

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 *bis*.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 28 FEBRUARY 2001

Name and mailing address of the IPEA/US	Authorized officer
Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	FRANTZY POINVIL James R. Matthews
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Form PCT/IPEA/408 (cover sheet) (July 1998)★

WRITTEN OPINION

International application No.
PCT/US99/25508

I. Basis of the opinion

1. With regard to the **elements** of the international application:*

[X] the international application as originally filed

[X] the description:
pages 1-12 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

[X] the claims:
pages 13-17 , as originally filed
pages NONE , as amended (together with any statement) under Article 19
pages NONE , filed with the demand
pages NONE , filed with the letter of

[X] the drawings:
pages 1-15 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

[X] the sequence listing part of the description:
pages NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

[ ] the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

[ ] the language of publication of the international application (under Rule 48.3(b)).

[ ] the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

[ ] contained in the international application in printed form.

[ ] filed together with the international application in computer readable form.

[ ] furnished subsequently to this Authority in written form.

[ ] furnished subsequently to this Authority in computer readable form.

[ ] The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

[ ] The statement that the information recorded in computer readable form is identical to the writen sequence listing has been furnished.

4. [X] The amendments have resulted in the cancellation of:

[X] the description, pages NONE

[X] the claims, Nos. NONE

[X] the drawings, sheets/fig NONE

5. [ ] This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

** Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed".*

WRITTEN OPINION

International application No.
PCT/US99/25508

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. statement

Novelty (N)	Claims	1-40	YES
	Claims	NONE	NO
Inventive Step (IS)	Claims	NONE	YES
	Claims	1-40	NO
Industrial Applicability (IA)	Claims	1-40	YES
	Claims	NONE	NO

2. citations and explanations

Claims 1-2, 6-20, 21-22 and 26-40 lack an inventive step under PCT Article 33(3) as being obvious over Nicholls et al.

As per claims 1-2, Nicholls et al teaches a system for processing parcel shipping. The system comprises generating shipping/mailing data for articles in at least one of a plurality of client terminals which are linked to a host terminal wherein the generating step comprises information transfer between the client terminal and the host terminal. Note figure 1 and column 3, lines 38 to column 4, line 7 of Nicholls. Nicholls et al also teaches producing and printing a shipper's label. Note column 4, lines 1-2 and column 9, lines 11-15.

As per claims 6 and 7, many enterprises regularly send letters and monthly bills to their customers.. Pasting the shipping/mailing data from a clipboard or from an electronic address book would have been obvious to the skilled artisan for quick entry of shipping/mailing data into envelopes.

As per claim 8, Nicholls discloses selecting a carrier.

As per claim 9, various classes of services are available in the system of Nicholls et al. Note figures 4A to 4D of Nicholls et al.

As per claims 10-14, Official Notice is taken that public address books which can suggest valid addresses are sometimes used by the Postal Office when determining whether or not an address is a valid address. Incorporating this well known technique into the combination of Nicholls and Pastor et al would have been obvious to the skilled artisan with the motivation of properly determining a valid address for a given label. Standardizing shipping/mailing data and taking account how many lines an address has is also well practiced in the art as such would have been an obvious feature in the combination of Nicholls et al and Pastor et al.

Claims 15-16 recite inherent features in the combination of Nicholls et al and Pastor et al.

As per claims 17-19, providing means or steps for enforcing license compliance wherein the license compliance comprises a maximum number of client terminals being services by the host terminal is not explicitly taught in the combined teachings of Nicholls and Pastor et al. Such would have been obvious to the (Continued on Supplemental Sheet.)

WRITTEN OPINION

International application No.
PCT/US99/25508

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

TIME LIMIT:

The time limit set for response to a Written Opinion may not be extended. 37 CFR 1.484(d). Any response received after the expiration of the time limit set in the Written Opinion will not be considered in preparing the International Preliminary Examination Report.

V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):
skilled artisan in order to ensure that license agreements are met.

As per claim 20, allowing a different terminal to fill in for a disconnected terminal would have been obvious to the skilled artisan in the combination of Nicholls et al and Pastor et al in order to allow access of the system to other waiting terminals.

Claims 21-22 and 26-40 contain similar limitations recited in claims 1-2 and 6-20 respectively and therefore are found to be obvious under a similar rationale.

Claims 23-25 lack an inventive step under PCT Article 33(3) as being obvious over Nicholls et al as applied to claims 1 and 20 above in view of Pastor et al.

As per claims 23-24, the system of Nicholls is discussed above. Nicholls fails to explicitly teach encoding the shipping/mailing data int a 2-dimensional bar code. Pastor et al teaches generating 2-dimensional code and encrypting the barcode. Note the abstract and column 2, lines 23-42 of Pastor et al. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Nicholls et al by encoding the shipping/mailing data with a 2-dimensional barcode in order to prevent reprinting of the shipping/mailing data or label so as to avoid fraudulent use of a label.

As per claim 25, shuffling the data in the combination of Nicholls and Pastor et al would have been obvious to the skilled artisan in order to provide alternate means of encrypting the data so as to avoid fraudulent uses of the shipping/mailing data.

---------- NEW CITATIONS ----------
US 5,485,369 A (NICHOLLS ET AL.) 16 JANUARY 1996, SEE COLUMN 3, LINE 38 TO COLUMN 4, LINE 7.
US 5,666,421 A (PASTOR ET AL) 09 SEPTEMBER 1997, SEE COLUMN 2, LINES 23-42.

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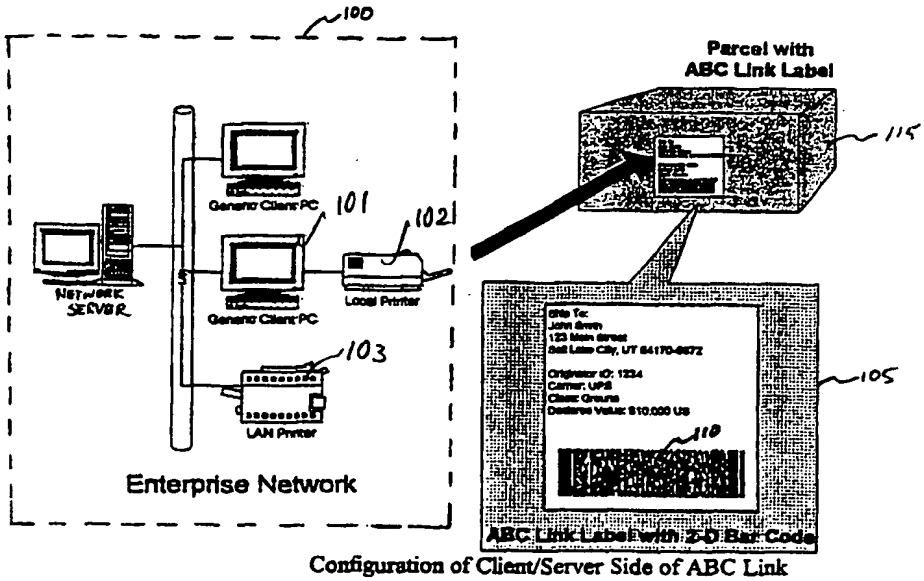

Configuration of Client/Server Side of ABC Link

(57) Abstract

An efficient and errorfree processing of shipping/mailing information is fostered by reducing manual work and by validating the information. A user at terminal (101) generates barcode (110) including encrypted shipping information is generated at an enterprise network site (100) for processing a mail piece (115). The label (105) is placed on the mail piece (115) for forwarding to mail center (103). Shipping/mailing center (103) includes a terminal (125) which converts the shipping information into the appropriate format of the selected carrier. Terminal (125) then instructs thermal printer (13) to print a shipping label (135) affixed to mail piece (115).

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Description

METHOD AND SYSTEM FOR SHIPPING/MAILING

Technical Field

The invention relates to shipping/mailing techniques, more particularly utilizing distributive computerized technology.

Background of the Invention

Many offices/organizations process large numbers of mail pieces or parcels and utilize different shipping or mailing carriers such as the United States Postal Service (USPS), United Parcel Service (UPS), Federal Express (FedEx), RPS and DHL, for example. For each mail piece, the carriers require shipping/mailing information including the delivery address and, typically, further instructions such as the class of service, for example.

The required information may be supplied by manual entry, e.g. using the carrier's proprietary software. Such entry tends to be inefficient and error prone.

Summary of the Invention

The present invention aims at more efficient and error-free processing of shipping/mailing information. Measures are taken for reducing manual work and validating the information, including utilization of optical scanning, character recognition (OCR) and bar codes, and reference to standard address databases in a distributive-processing technique, e.g. client-server or peer-to-peer.

In addition to the addressee, a user of the technique may specify the carrier and/or a class of service to be used for delivery. Alternatively, choice of a delivery option can be provided automatically, based on predefined rules. At a user site, delivery information may be entered by typing, by importing from a personal or public database/list, or by scanning by an optical character recognizer (OCR), for example.

An entered delivery address can be checked against the USPS Address Matching System (AMS) database to verify its validity. If the address fails to check out, possible valid addresses can be offered automatically for the user's consideration. Automatically also, addresses can be standardized, e.g. as to font and format, and for readability. Additional data may be appended, e.g. an internal billing code and/or a tracking ID.

Shipping/mailing data as provided or generated can be printed onto a label or other suitable medium, readable to a human and/or in an encoded form, e.g. a 2-dimensional bar code as based on a 2-D symbol standard such as PDF-417 or Data Matrix, for example. With the label affixed, e.g. detachably, a parcel or mail piece is ready for forwarding to a shipping/mailing room/location.

Preferably, with the label including a bar code, shipping/mailing information can be scanned for automated processing at the shipping location, to print the selected shipper's actual shipping label and postage if required. To facilitate tracking, the shipping/mailing information may be uploaded to the shipper, e.g. to UPS Online.

Brief Description of the Drawing

Fig. 1 is a diagram illustrating mail piece origination.

Fig. 2 is a diagram illustrating mail piece processing at a shipping/mailing center.

Fig. 3 is an example of a computer opening/main screen view in mail piece origination.

Fig. 4 is a diagram of a distributive network as can be used in mail piece origination, including address validation and standardization.

Fig. 5 is a schematic for shipping/mailing address validation and standardization.

Fig. 6 is a state diagram for automated shipping/mailing address standardization.

Fig. 7 is a data flow diagram for automated address printing.

Fig. 8 is a state diagram for automated label generation.

Fig. 9 is a state diagram for automated address database importing.

Fig. 10 is a state diagram for automated address standardization and validation.

Figs. 10 and 11 are state diagrams for revenue protection.

Fig. 12 is a state diagram for automated feature authorization.

Fig. 13 is a state diagram for automated safeguarding against unauthorized access to address standardization/validation.

Fig. 14 is a state diagrams for automated license registration.

Fig. 15 is a state diagram for automated seat feature enforcement.

Detailed Description

Features as described herein with reference to the drawing have been implemented in an exemplary system here designated as Addressing and Bar Code (ABC)

Link/Host. The features are not required all to be included in a single embodiment of the invention, but can be used individually or in any suitable combination within various preferred embodiments. Conveniently in implementation, a suitable programming language is used, e.g. C++.

Figs. 1 and 2 illustrate over-all processing in shipping/mailing, e.g. at a large office facility. Specifically, Fig. 1 illustrates origination or generation of mail pieces at an enterprise network 100, and Fig. 2 their processing at a shipping/mailing center 103 where the mail pieces are further processed to shipping carriers such as the Post Office, UPS, RPS, FedEx and DHL, for example.

Fig. 1 shows a label 105 comprising a bar code 110, generated at a enterprise network site 100 for processing a mail piece 115. A user at a terminal 101 of the site 100 enters shipping information for the mail piece 115, such as shipping destination, originator identification, carrier, shipping class and declared value of the contents. The shipping information is encrypted and included in the bar code 110 on the label 105. The bar code 110 may be based on the PDF-417, Data Matrix, or other 2D-symbol standard. The label 105, which includes the entered shipping information and the bar code 110, is printed on a network or local printer of the site 100, and placed on the mail piece 115 for forwarding to the center 103 of Fig. 2 for shipping/mailing.

Fig. 2 shows the bar code 110 for the mail piece 115 being read using a bar code scanner 120 connected to a terminal 125 at the shipping/mailing center. The terminal 125 has suitable bar code recognition and decryption software for extraction and decryption of the shipping information from the bar code

110. The terminal 125 converts the shipping information into the appropriate format of the carrier selected for the mail piece 115. The converted information is uploaded to the shipping software of the selected carrier, e.g. UPS Online, and the terminal 125 instructs a thermal printer 130 to print a shipping label 135 for use by the carrier. With the shipping label 135 affixed, the mail piece 115 is ready for processing by the selected carrier.

Fig. 3 shows a graphical user interface (GUI) or screen display for processing at the terminal 101, with shipping by the USPS being shown as an example. The display resembles typical text processor screens, including a row 151 of menu buttons, a row 152 of icons, a shipping class display 153 as selected by one of the click tabs 154, here for the USPS, an address text display 155, a special services selection display 156, an originating department information display 157, a multiple-label button 158, a print button 159, an address book access button 160, a "remove" button 161 and a shipping directions button 162. Functions are actuated and controlled by typing, and by familiar clicking on buttons, tabs and icons.

It has been recognized that the use of conventional bar codes for the labels generated at network 100 for processing at a shipping/mailing center 103 may be susceptible to fraudulent circumvention. For example, a conventional bar code on label 105 might be readable by an unauthorized, conventional bar code reader. The use of unauthorized systems and components may undermine the integrity and performance of the shipping process.

As a countermeasure, the shipping information for the mail piece 115 is encrypted before it is used to generate the bar code 110. The terminal 125 includes a

decryption algorithm for the data read by the bar code reader 120 from the bar code 110. Unauthorized systems, without the decryption algorithm will be unable to process the encrypted shipping information from the bar code 110.

Further to deter the use of unauthorized equipment at shipping/mailing room center 103, the shipping address and information for a mail piece can be shuffled in accordance with a predetermined shuffling algorithm prior to encryption. For example, the order of first and last names of a recipient may be reversed prior to encryption. At the mailroom terminal 125, a rearrangement algorithm will then undo the shuffling. Shuffling and rearrangement algorithms can be updated periodically to prevent their discovery upon inspection of the shuffled shipping information.

While use of the scanner 120 eliminates the likelihood for error in transferring the shipping information onto the shipping label 135, without further validation there remains a concern with error at the source, e.g. a user at the terminal 101 entering erroneous shipping information. A resulting invalid shipping address may remain undetected until the carrier fails to deliver the mail piece 115. This concern can be minimized by measures as follows:

Fig. 4 shows a user network 100 for use with Windows NT, featuring address validation using a database provided by the USPS, with validation being facilitated by standardizing addresses as to their format. The USPS address database service, known as its Address Matching System (AMS), includes on a CD-ROM all valid U.S. addresses in a standardized format. Updated versions are provided periodically under a license agreement.

The network 100 comprises a network server 200 and a network hub 205, providing network services to

client terminals 210, 215, 220, and 225. The network 100 may be a packet-switched network for transporting information in accordance with the standard transmission control protocol/internet protocol (TCP/IP). Remote access is provided for terminal 225 by a dial-up/Internet connection through the modem 230.

Windows operating systems, e.g. Windows 95, 98 or NT are installed at the server 200 and terminals 210, 215, 220 and 225 for communicating amongst one another. Further installed at the terminals 215, 220 and 225 is software here designated as ABC Link and, at the terminal 210, software designated as ABC Host. The latter includes an AMS capability for making use of the AMS CD in a CD-ROM drive 235. A hardware key 240 is connected at a communication port of the terminal 210, representing a contractual safeguarding element.

For the host terminal 210, use of Windows NT is advantageous in that it provides a launch service that keeps ABC Host running even in the absence of any current demand for shipping/mailing address processing. Thus, there will be no need for start-up when demand arises. For operating systems that do not provide such a service, e.g. Windows 95 and 98, a launcher application can be provided in the host terminal 210 for the same purpose. The launcher application can be included automatically at the time ABC Host is installed at the terminal 210.

Installation and other auxiliary software for Link/Host can be stored at the network server 200 or any of the client terminals 210, 215, 220, or 225. Instead of at one of the terminals, such as the terminal 210, ABC Host can be installed at the server 200. Conversely, while Fig. 4 shows a client-server configuration, ABC Link/Host can be implemented in the absence of the network server 200, in a peer-to-peer configuration.

One and the same terminal may include ABC Host as well as ABC Link, e.g. the remote client terminal 225 in Fig. 4, with a corresponding additional subscription to ABC Host. In this case, the ABC Link at the terminal 225 may use either its own ABC Host or the one provided via the network

Fig. 5 illustrates shipping/mailing address validation/standardization in ABC Link/Host prior to use in labeling. Shown are two network client terminals 215 and 220, and three Internet client terminals 225-227, all in communication with the host terminal 210. From one of the client terminals, 215, potentially inaccurate or "dirty" shipping/mailing addresses are assembled in a marshaling list 500 for checking against AMS data 510 from the CD ROM 235. The host 210 returns proposed "clean" addresses to the marshaling list 500 for accessing from the client 215.

Without precluding processing of a single shipping/mailing address individually, the marshaling list 500 facilitates processing of addresses in batches. This feature can serve to minimize the number of round-trip communications between the client terminal 215 and the host 210, thereby enhancing processing efficiency.

Fig. 6 illustrates address standardization processing, either to the successful display of an address or to failure. From a client terminal 215, a pre-existing address 601 or a newly entered address 602 can be entered into a marshaling list 603 for submission 605 to the standardizing functionality 606 of the host 210. Submission also activates preparation of a license interface 604. Standardization 606 is contingent on verifications 607 and 608 that the hardware key 240 remains connected at the host 210 and the requirements of the license interface are met. If so, the submitted address list is un-marshaled, 609, the submitted

addresses are copied, 610, for AMS processing 611, a custom-address-marshaling list is prepared for the standardized addresses and is attached to the submitted address list, 612 and 613. The resulting list is unmarshaled, 614, for display.

Fig. 7 illustrates address data flow to printing. Addresses can be created or selected at a module 701, assembled as Array_Addresses 702, copied as Array_AddressSearch 703, AMS-processed, 704, e.g. as shown in Fig. 6, and copied as Array_AddressCorrected 705. As AMS-processing may result in several proposed corrected addresses for one and the same original new address, display at 706 will prompt the user to select the one intended, resulting in Array_AddressSelected 707 and a key index with respect to Array_AddressCorrected 705. Copying of the finally selected addresses yields Array_AddressChosen 708 to which business rules can be applied, e.g. generation of multiples to yield Array_AddressPrint. Final printing can be subject to printing rules, e.g. how many addresses to print per sheet of paper in generating labels.

Fig. 8 illustrates address processing for generating a label. An address 801 can be obtained from the clipboard 802 where it was placed by a different application 803. An address from the clipboard data can be parsed, 804, with different parsing rules 805-809 being applied depending on the number of lines of the address and on the presence/absence of numerals and special characters, for example. An address 801 can be saved in a database 810, preferably after ABC Host services 811 have produced the address as standardized, 812. A preferred carrier and class of service, 813, can be selected for an address 801 or standardized address 812. Printing, 814, can include a 2-dimensional bar code meeting the PDT417 standard, for example.

Fig. 9 illustrates importing of addresses, activated from a menu 901 and involving browsing, e.g. of a text file 902, MVP import 903 or database 904. Options 905 include standardizing 906, creating a category 907 and including in a database 908. A standarzed address 906 can be selected, 910, for inclusion in the category 907.

Fig. 10 shows workstations 215, 220 and 225 with respective licenses 216, 221 and 226. System communications 1001 result in license registration at the server application 1002 which includes a license callback capability for periodic checking on workstations 215, 220 and 225 as to their status under the license. The server application 1002 can check licenses for functionality 1003, and the license can be destroyed, 1004, in case of lack of authorization. The license is destroyed also in case a license callback results in failure, in which case the number of available seats or licenses can be incremented, 1005, at a dynamic license table 1006. A time license rotator 1007 is in communication with the dynamic license table 1005, the server application 1002 and the license callback 1002.

Fig. 11 shows the host 210 starting the clock 1101 for periodically changing the license key 1102. Each time a new license key is chosen, the most recent two keys are saved in a history 1003. Issuance of a new key initiates callback at the callback queuing table 1104 that is informed by the total number of seats 1105 that is also referred to by the host 210 in ending an application if service is requested at too many terminals as compared with the number of licenses. The host 210 further refers to the authorization number 1106 and hardware dongle 1107, which both depend on seat options 1008. The ABC license 1009 is established when the application starts. Before an address standardization

1010 can be effected, the key comparison 1011 has to be successful.

Fig. 12 illustrates feature or functionality authorization at the host 210 for a client 215 whose serial number is obtained from a dongle 1201. An authorization code is read, 1202. An encryption engine 1203 is called on for feature decryption, yielding options 1204. The options 1204 are concatenated with internal data 1205 and encrypted to form an encrypted electronic authorization signature 1206. Authorization is established if, at 1207, the authorization code and the encrypted electronic authorization signature are in agreement.

Fig. 13 illustrates processing of a request for address validation and standardization from a terminal 215. Passed in with a standardization request 1301 are a new address list 1302 and the ABC license interface 1303. The ABC host 210 promotes the base interface to the ABC license interface 1304 and ascertains that the request comes with a current authentication "cookie", or at least by one of the most recent two previous cookies. If so, the request for standardizing is acted on, 1306, by actuating AMS 235.

Fig. 14 illustrates license registration for ensuring that the number of client terminals using the system remains limited at all times by the number of licenses. At the terminal 215, the ABC license 1401 is created. Upon connection to the host 210, the license is registered, and a comparison 211 between the total number 212 of seats and the available or free number 213 of seats. If no seats are available, 214, the requesting application at the terminal 215 ends. If a seat is available, 215, from callback update table 216 the number of available seats 217 is decremented and a cookie 218 is

issued for later, periodic verification that the terminal 215 continues to be in an authorized state.

Fig. 15 illustrates continuing seat feature enforcement. Periodically, e.g. every 2 minutes per timer 1501, a new cookie is generated. The current cookie 1502 is saved, as are the two immediately preceding values, establishing a cookie history 1503. Where the callback table 1504 is updated successfully, the new cookie is forwarded to the corresponding active terminal; otherwise, 1505, the corresponding license is canceled and the number of available seats is incremented, 1506.

Claims

1. A method for shipping/mailing articles comprising the steps of:

generating shipping/mailing data for one of the articles at one of a plurality of client terminals which are linked to a host terminal, wherein generating comprises information transfer between the client terminal and the host terminal; and

producing the shipping/mailing data for generating a shipper's label.

2. The method of claim 1, wherein producing comprises printing the shipping/mailing data.

3. The method of claim 1, wherein producing comprises encoding the shipping/mailing data in a 2-dimensional bar code.

4. The method of claim 1, wherein producing comprises encrypting the data.

5. The method of claim 1, wherein producing comprises shuffling the data.

6. The method of claim 1, wherein generating the shipping/mailing data comprises referring to an electronic address book.

7. The method of claim 1, wherein generating the shipping/mailing data comprises pasting from a clipboard.

8. The method of claim 1, wherein generating the shipping/mailing data comprises selecting a carrier.

9. The method of claim 1, wherein generating the shipping/mailing data comprises selecting a class of service.

10. The method of claim claim 1, wherein generating the shipping/mailing data comprises referring to a database of valid addresses for validation.

11. The method of claim claim 10, wherein referring to the database of valid addresses yields a proposed address.

12. The method of claim 1, wherein generating the shipping/mailing data comprises address standardizing.

13. The method of claim 12, wherein standardizing takes into account how many lines an address has.

14. The method of claim 10, wherein referring to a database is effected for a batch of addresses.

15. The method of claim 1, wherein an application for servicing the client terminals keeps running even in the absence of a request from a client terminal.

16. The method of claim 15, wherein the host terminal has a launcher application for keeping the application running.

17. The method of claim 1, further comprising the host terminal referring to a hardware key for enforcing license compliance.

18. The method of claim 17, wherein license compliance comprises compliance with a maximum number of client terminals being serviced by the host terminal.

19. The method of claim 17, further comprising the host terminal making callbacks to the client terminal.

20. The method of claim 17, further comprising the host terminal allowing a different terminal to fill in for a disconnected terminal

21. A medium comprising computer-interpretable instructions for effecting a method for shipping/mailing articles, comprising instructions for:

generating shipping/mailing data for one of the articles at one of a plurality of client terminals which are linked to a host terminal, wherein generating comprises information transfer between the client terminal and the host terminal; and

producing the shipping/mailing data for generating a shipper's label.

22. The medium of claim 21, including instructions for printing the shipping/mailing data.

23. The medium of claim 21, including instructions for encoding the shipping/mailing data in a 2-dimensional bar code.

24. The medium of claim 21, including instructions for encrypting the data.

25. The medium of claim 21, including instructions for shuffling the data.

26. The medium of claim 21, including instructions for referring to an electronic address book in generating the shipping mailing/mailing data.

27. The medium of claim 21, including instructions for pasting from a clipboard in generating the shipping/mailing data.

28. The medium of claim 21, including instructions for selecting a carrier.

29. The medium of claim 21, including instructions for selecting a class of service.

30. The medium of claim 21, including instructions for referring to a database of valid addresses for validation.

31. The medium of claim 30, wherein referring to the database of valid addresses yields a proposed address.

32. The medium of claim 20, including instructions for address standardizing.

33. The medium of claim 32, wherein standardizing takes into account how many lines an address has.

34. The medium of claim 30, wherein referring to a database is for a batch of addresses.

35. The medium of claim 21, including instructions for keeping an application for servicing the client running even in the absence of a request from a client terminal.

36. The medium of claim 35, including instructions for loading a launcher application.

37. The medium of claim 21, including instructions for the host terminal to refer to a hardware key for enforcing license compliance.

38. The medium of claim 37, wherein license compliance comprises compliance with a maximum number of client terminals being serviced by the host terminal.

39. The medium of claim 37, including instructions for the host terminal to make callbacks to the client terminals.

40. The medium of claim 37, including instructions for the host terminal to allow a different terminal to fill in for a disconnected terminal.

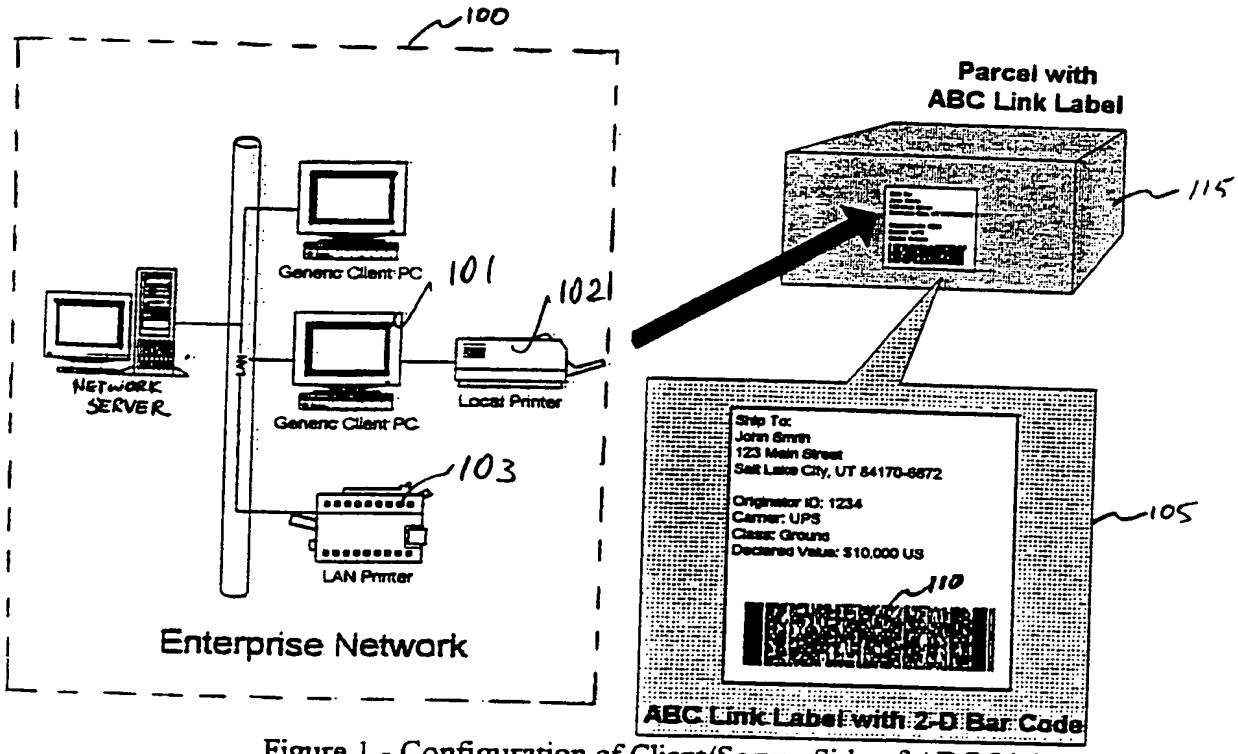


Figure 1 - Configuration of Client/Server Side of ABC Link

Fig. 1

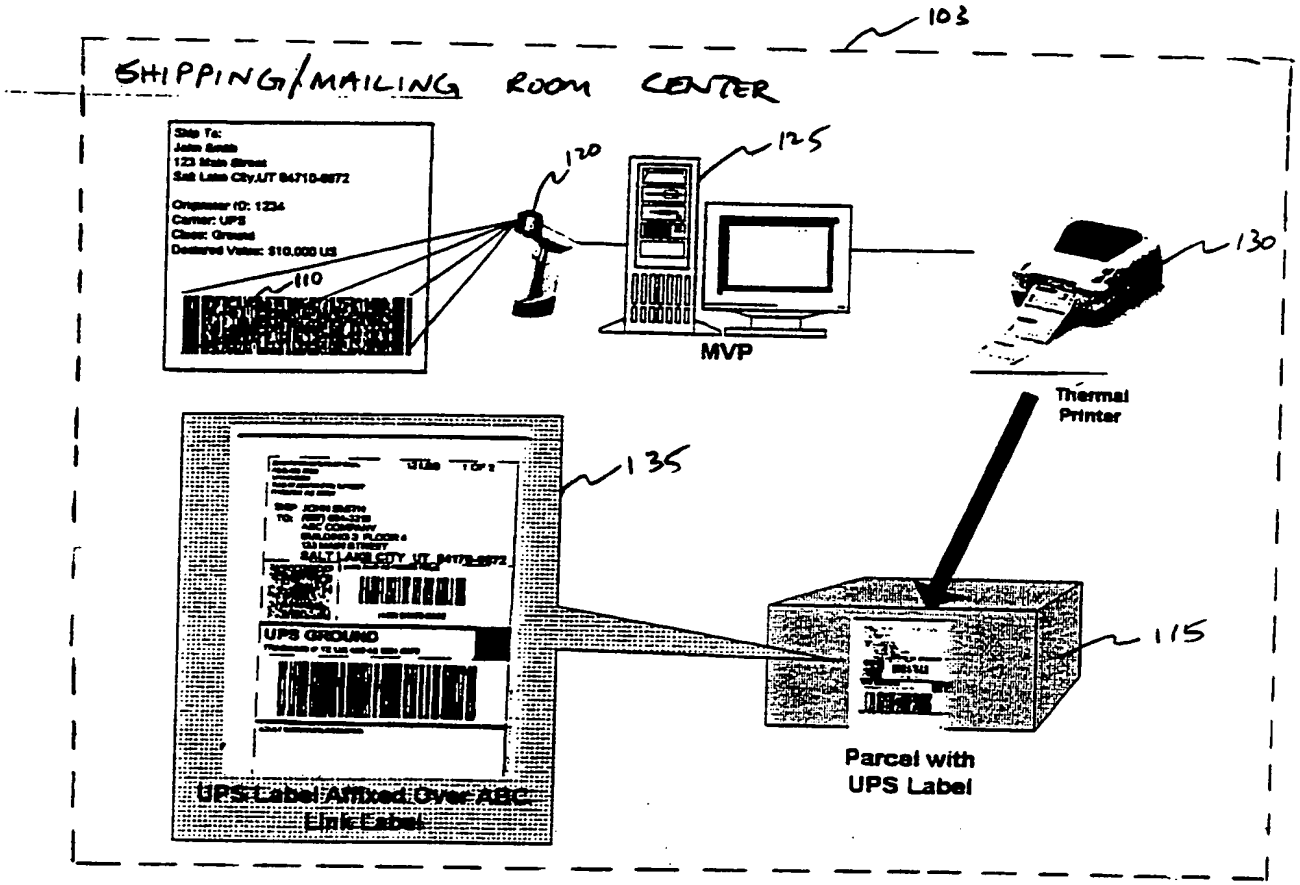
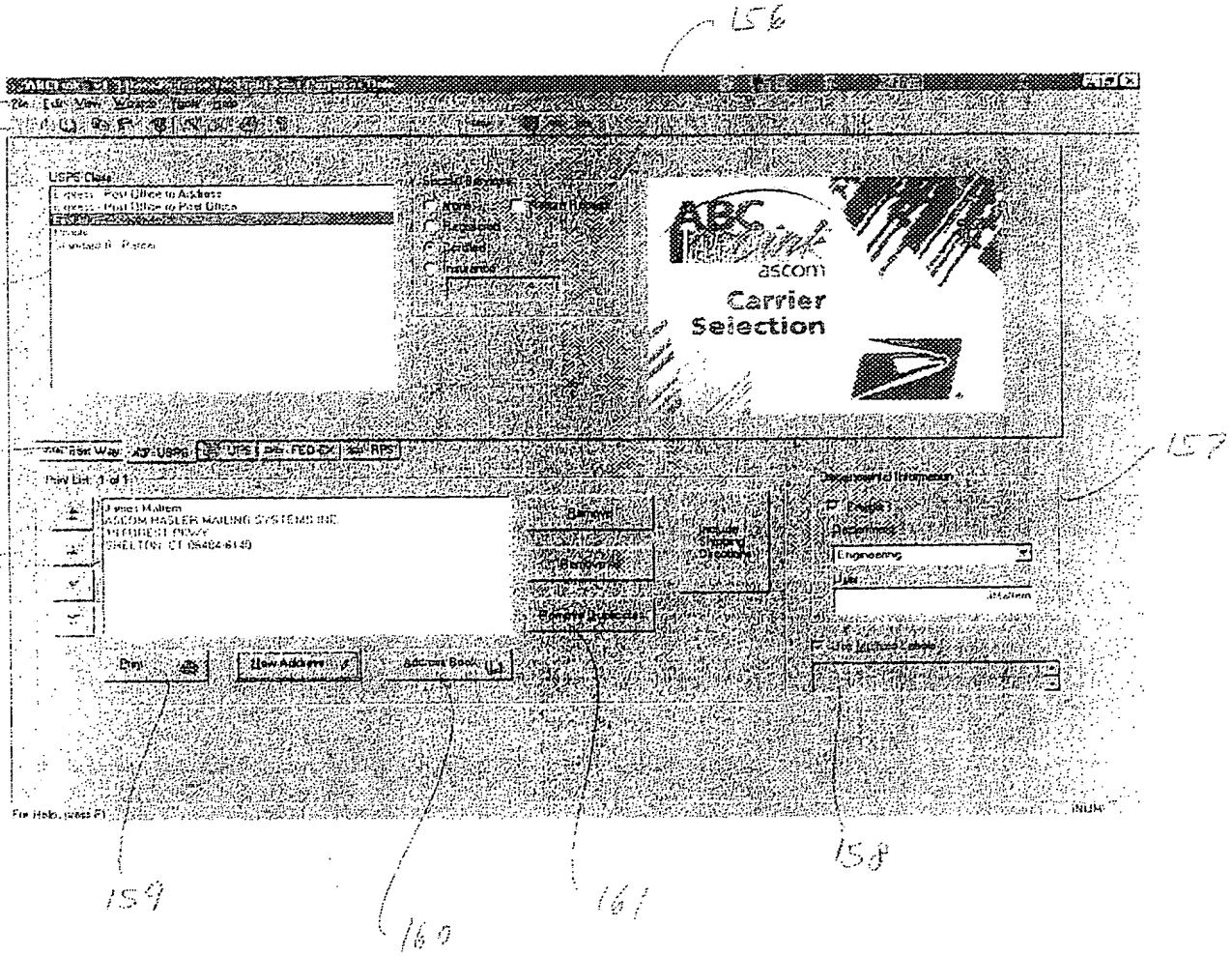


Figure 2 - Shipping/Mailing Room Side of ABC Link

Fig. 2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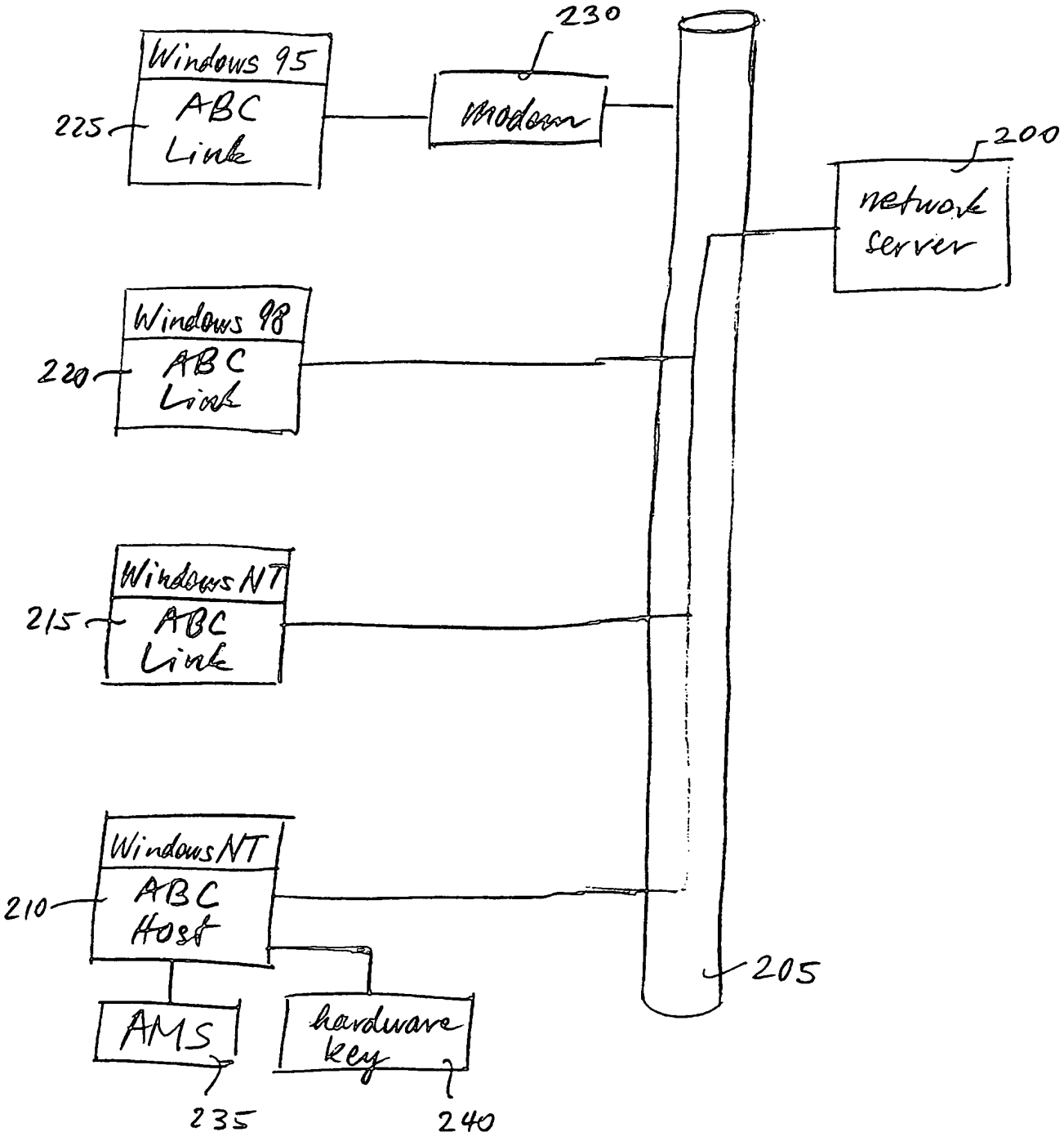
ABC
ascom
Carrier
Selection

Fig. 3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server
Windows 98
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Link
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ABC
Host
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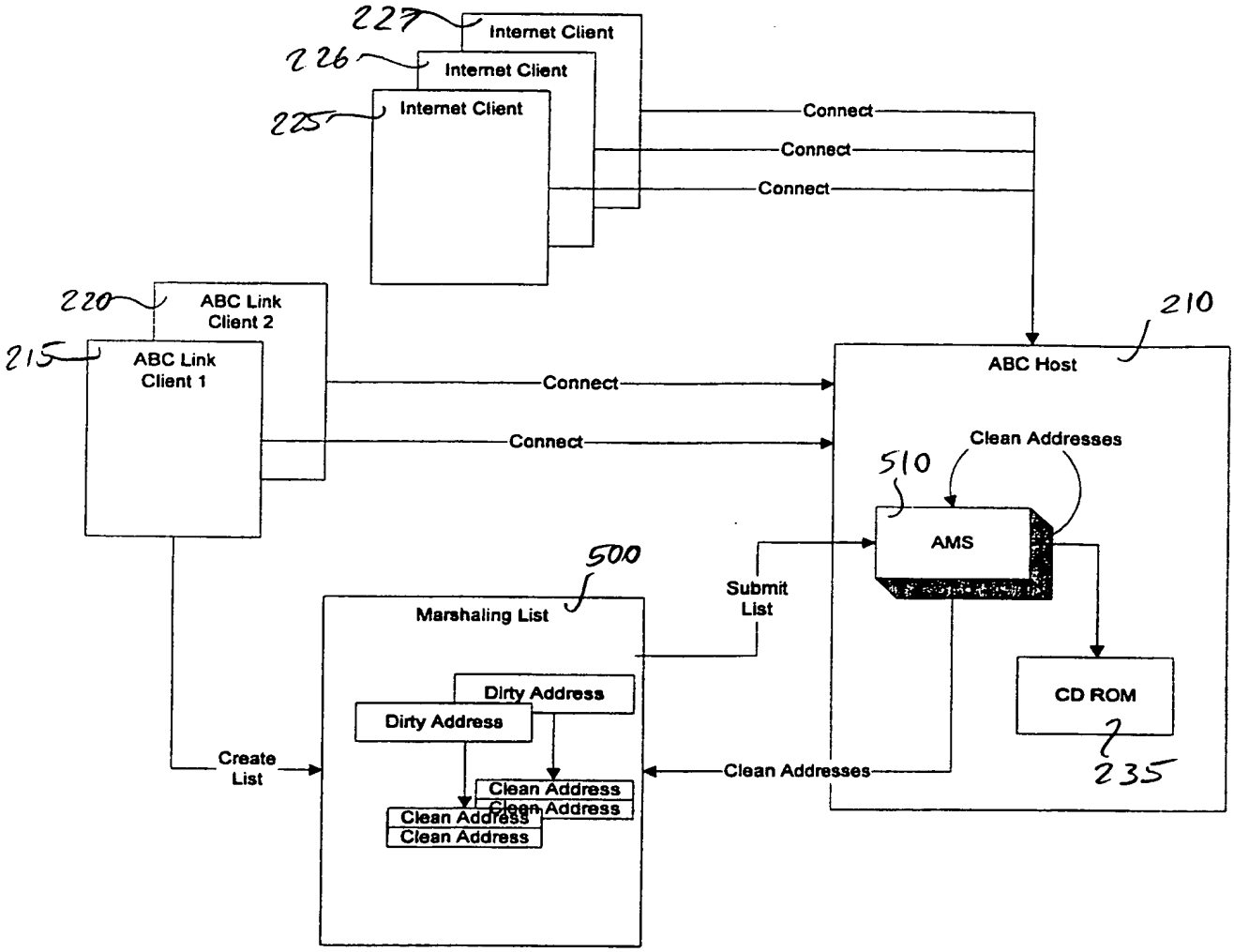
205
AMS
hardware
key
235
240

Fig. 4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Internet Client
226
Internet Client
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Internet Client
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ABC Link Client 2
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ABC Link Client 1
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Connect
Clean Addresses
510
AMS
500
Marshaling List
Submit List
Dirty Address
Dirty Address
CD ROM
235
Create List
Clean Addresses
Clean Address
Clean Address
Clean Address
Clean Address

Fig. 5

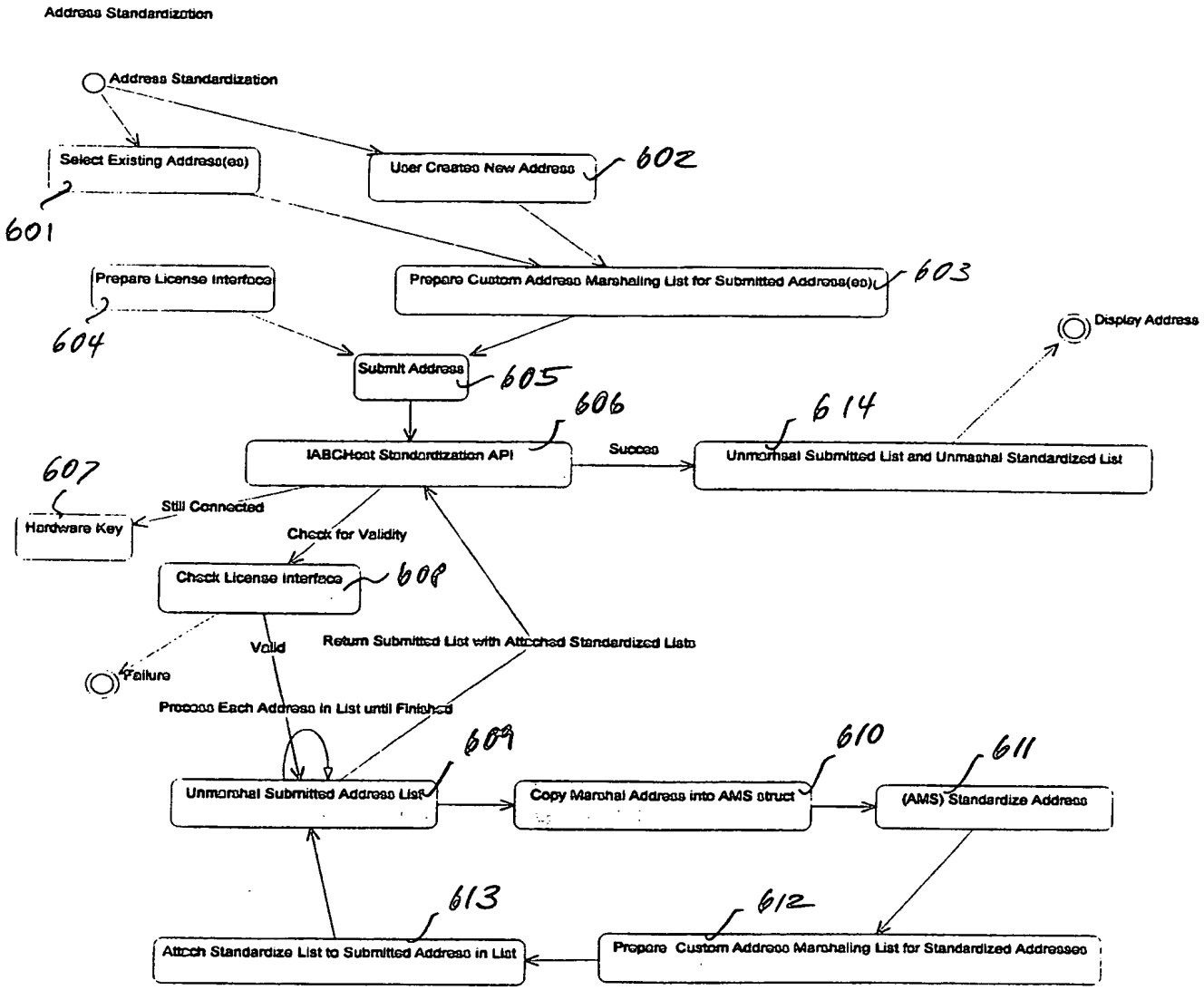
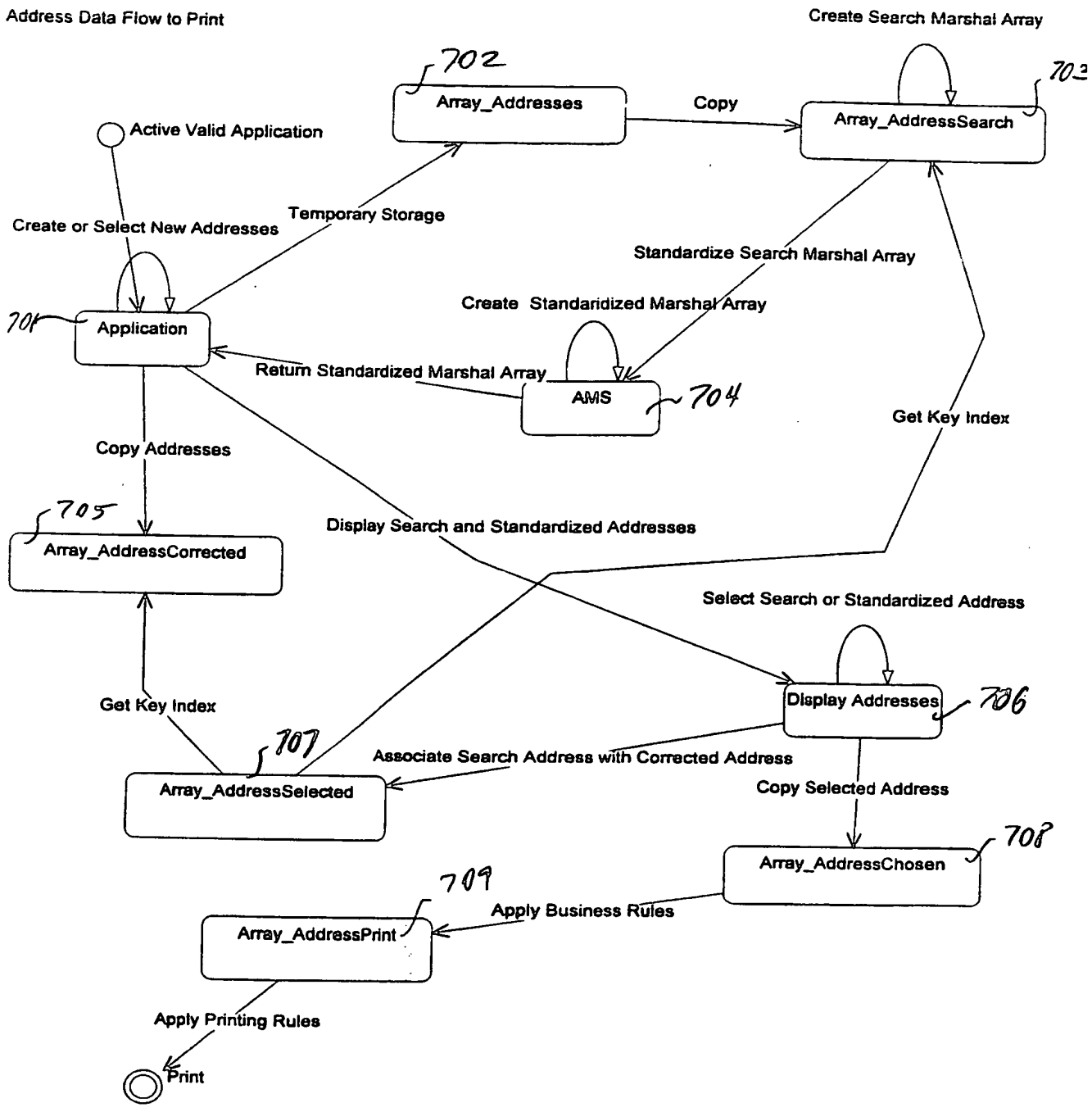

Address Standardization
Address Standardization
Select Existing Address(es)
User Created New Address
602
601
Prepare License Interface
Prepare Custom Address Marshaling List for Submitted Address(es)
603
604
Display Address
Submit Address
605
606
614
IABCHost Standardization API
Success
Unmarshal Submitted List and Unmarshal Standardized List
607
Still Connected
Hardware Key
Check for Validity
Check License Interface
608
Valid
Return Submitted List with Attached Standardized Lists
Failure
Process Each Address in List until Finished
609
610
611
Unmarshal Submitted Address List
Copy Marshal Address into AMS struct
(AMS) Standardize Address
613
612
Attach Standardize List to Submitted Address in List
Prepare Custom Address Marshaling List for Standardized Addresses

Fig. 6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Create Search Marshal Array
Active Valid Application
Array_Addresses
Copy
Array_AddressSearch
Temporary Storage
Create or Select New Addresses
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Create Standaridized Marshal Array
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Get Key Index
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Select Search or Standardized Address
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Array_AddressChosen
Apply Business Rules
Array_AddressPrint
Apply Printing Rules
Print

Fig. 7

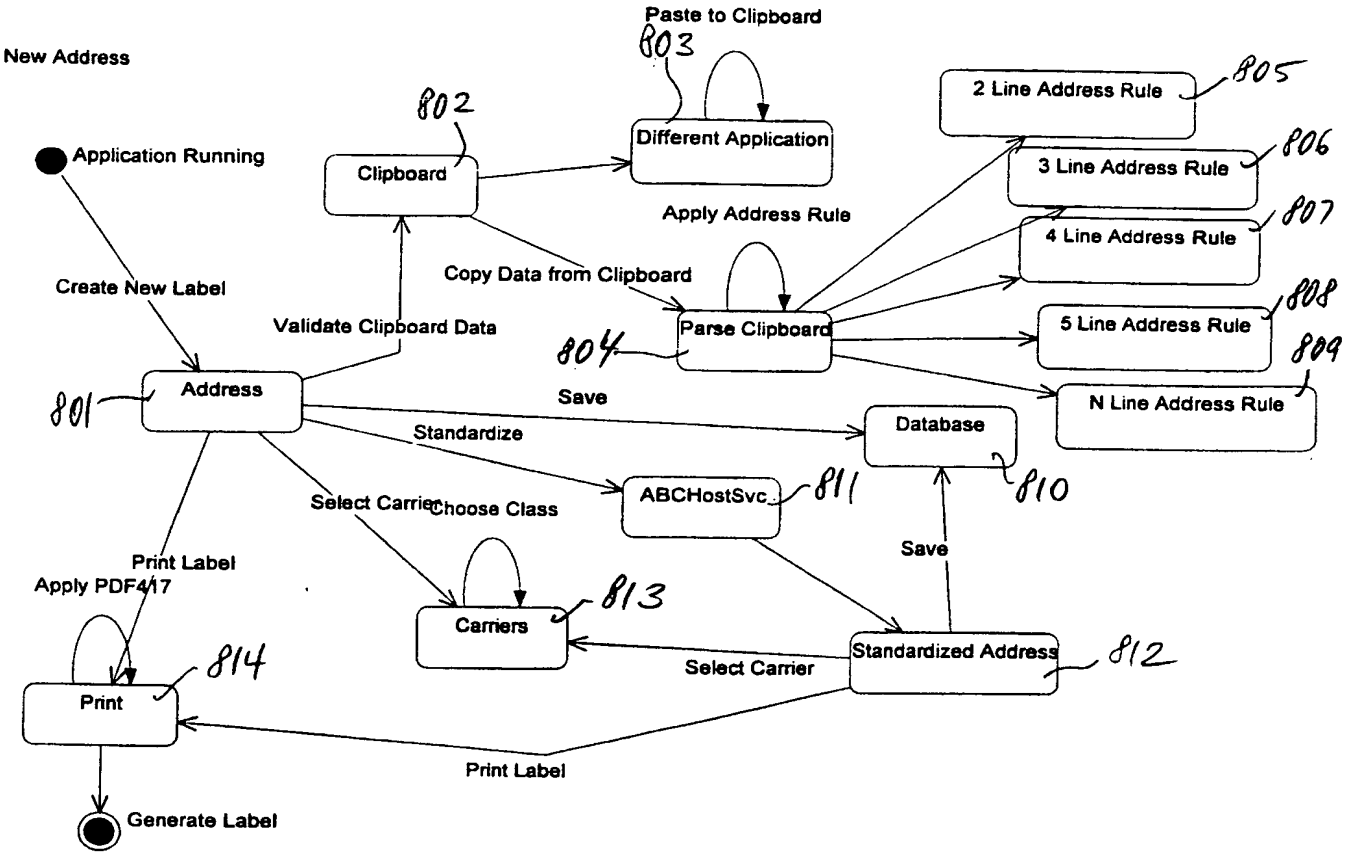
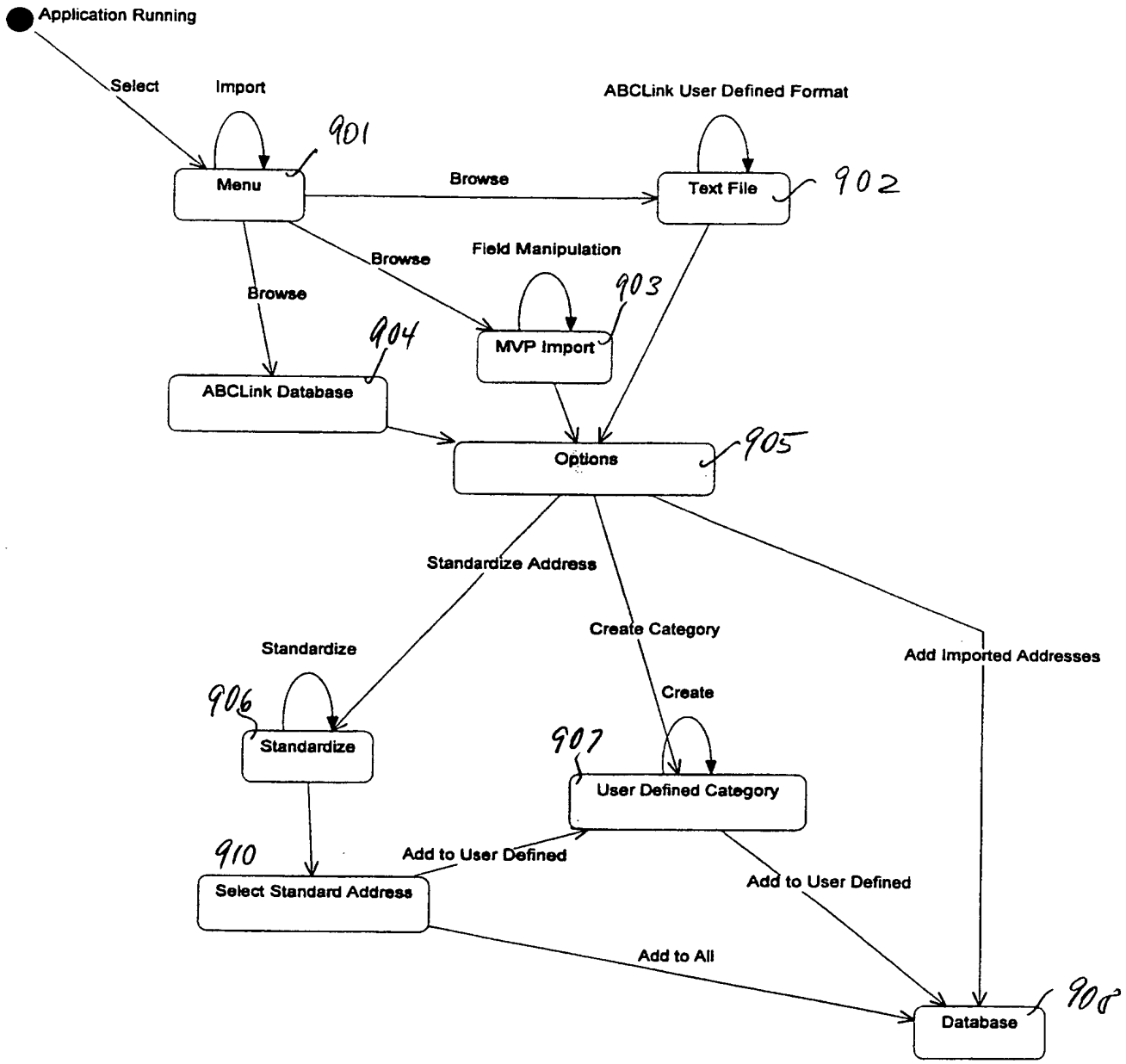

New Address
Application Running
Create New Label
Address
801
Validate Clipboard Data
Clipboard
802
Paste to Clipboard
803
Different Application
Copy Data from Clipboard
Apply Address Rule
Parse Clipboard
804
2 Line Address Rule
805
3 Line Address Rule
806
4 Line Address Rule
807
5 Line Address Rule
808
N Line Address Rule
809
Save
Database
810
Standardize
ABCHostSvc
811
Select Carrier
Choose Class
Carriers
813
Save
Standardized Address
812
Select Carrier
Print Label
Apply PDF417
Print
814
Print Label
Generate Label

Fig. 8

Import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Browse
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ABCLink Database
Options
905
Standardize Address
Create Category
Add Imported Addresses
Standardize
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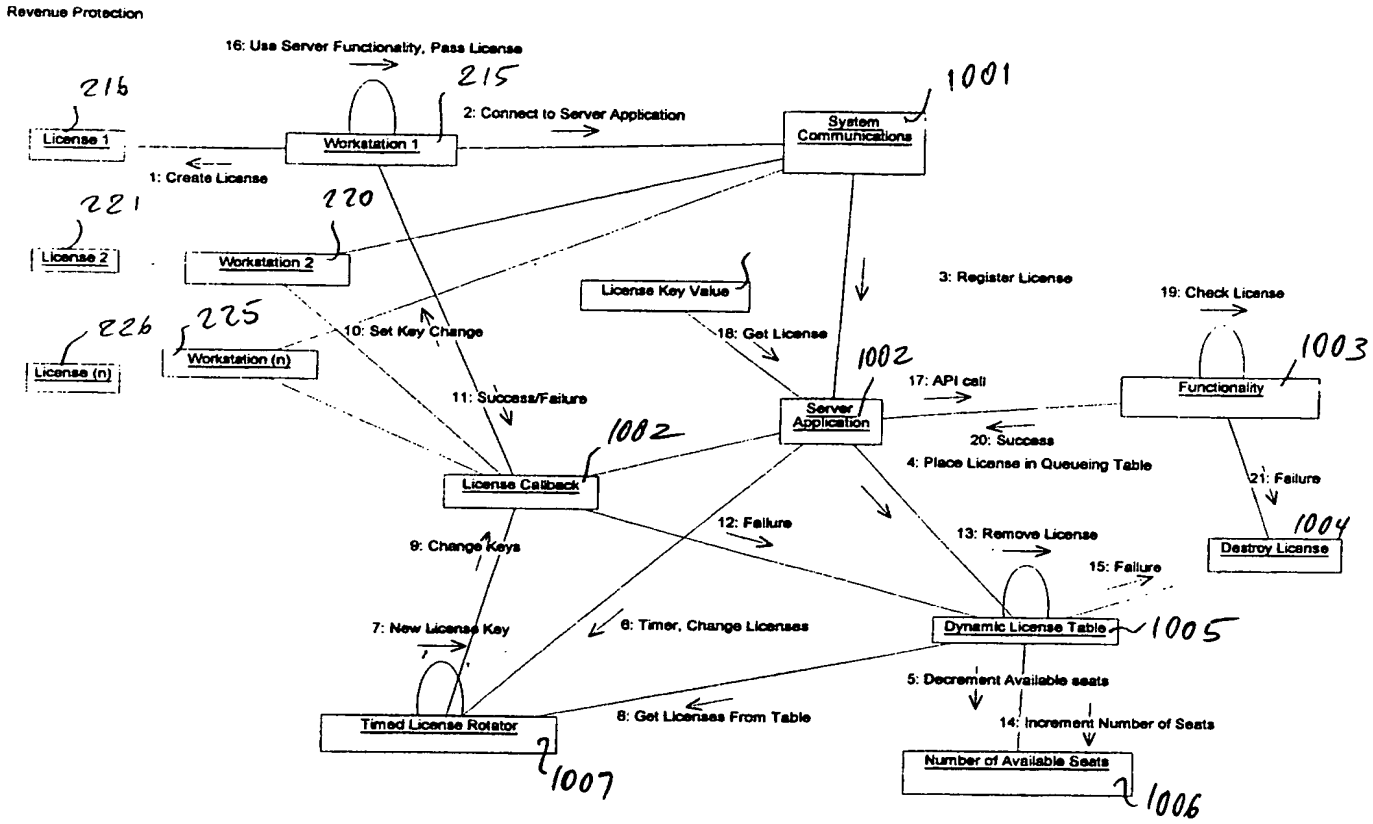
Create
907
Standardize
User Defined Category
910
Add to User Defined
Add to User Defined
Select Standard Address
Add to All
Database
908

Fig. 9


Revenue Protection
16: Use Server Functionality, Pass License
215
216
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Workstation 1
2: Connect to Server Application
System Communications
1001
1: Create License
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220
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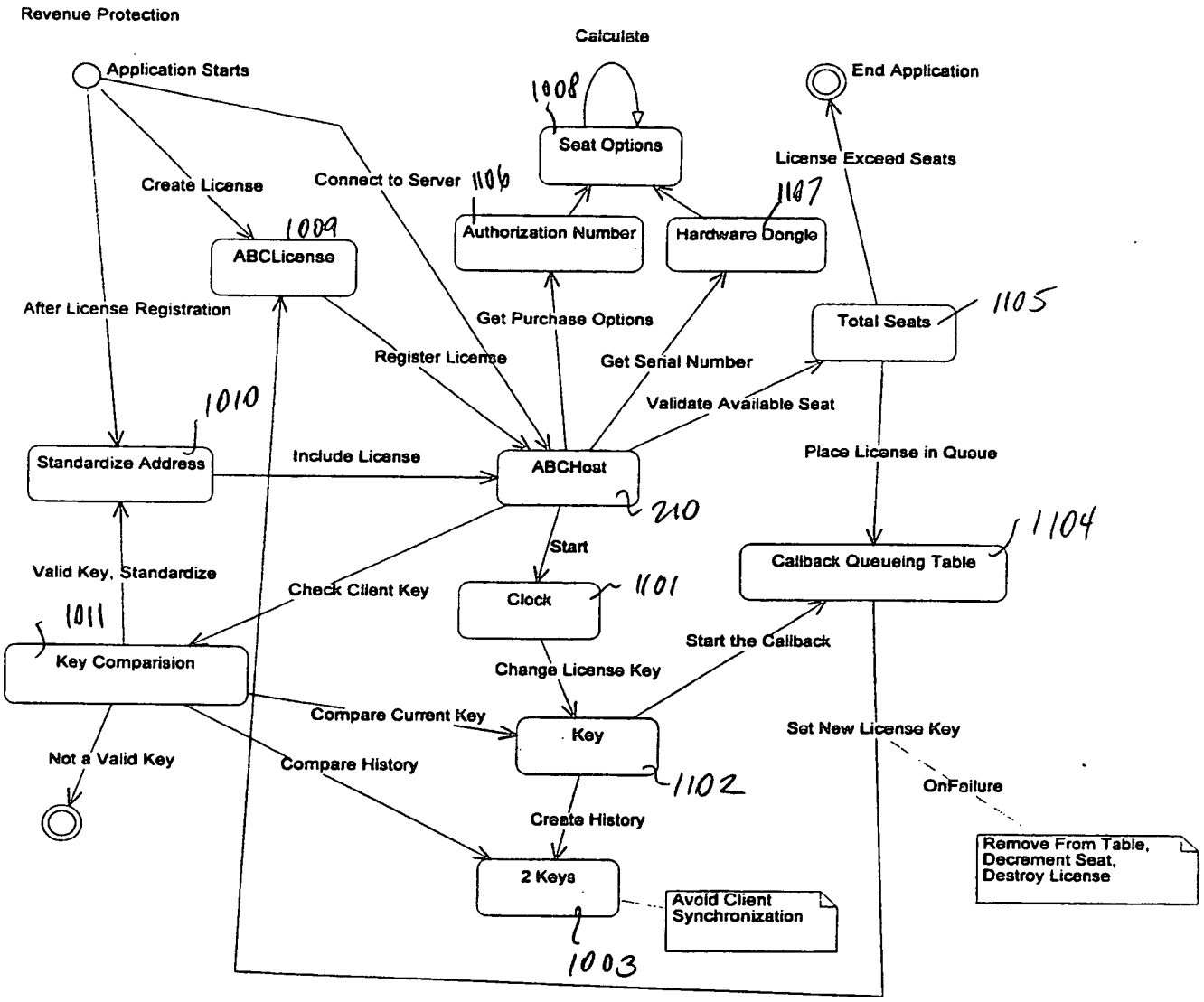
License Key Value
3: Register License
19: Check License
226
225
License (n)
Workstation (n)
10: Set Key Change
18: Get License
1002
1003
17: API call
11: Success/Failure
Server Application
Functionality
20: Success
1002
License Callback
4: Place License in Queueing Table
21: Failure
1004
12: Failure
13: Remove License
Destroy License
9: Change Keys
15: Failure
7: New License Key
6: Timer, Change Licenses
Dynamic License Table
1005
5: Decrement Available seats
8: Get Licenses From Table
14: Increment Number of Seats
Timed License Rotator
1007
Number of Available Seats
1006

Fig. 10


Revenue Protection
Application Starts
Calculate
1008
Seat Options
End Application
License Exceed Seats
Create License
Connect to Server
1106
1107
1009
ABCLicense
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Hardware Dongle
After License Registration
Get Purchase Options
Total Seats
1105
Register License
Get Serial Number
Validate Available Seat
1010
Standardize Address
Include License
ABCHost
210
Place License in Queue
Start
1104
Callback Queueing Table
Valid Key, Standardize
Check Client Key
Clock
1101
1011
Key Comparision
Start the Callback
Change License Key
Compare Current Key
Key
Set New License Key
Not a Valid Key
Compare History
1102
OnFailure
Create History
Remove From Table, Decrement Seat, Destroy License
2 Keys
Avoid Client Synchronization
1003

Fig. 11

Feature Authorization

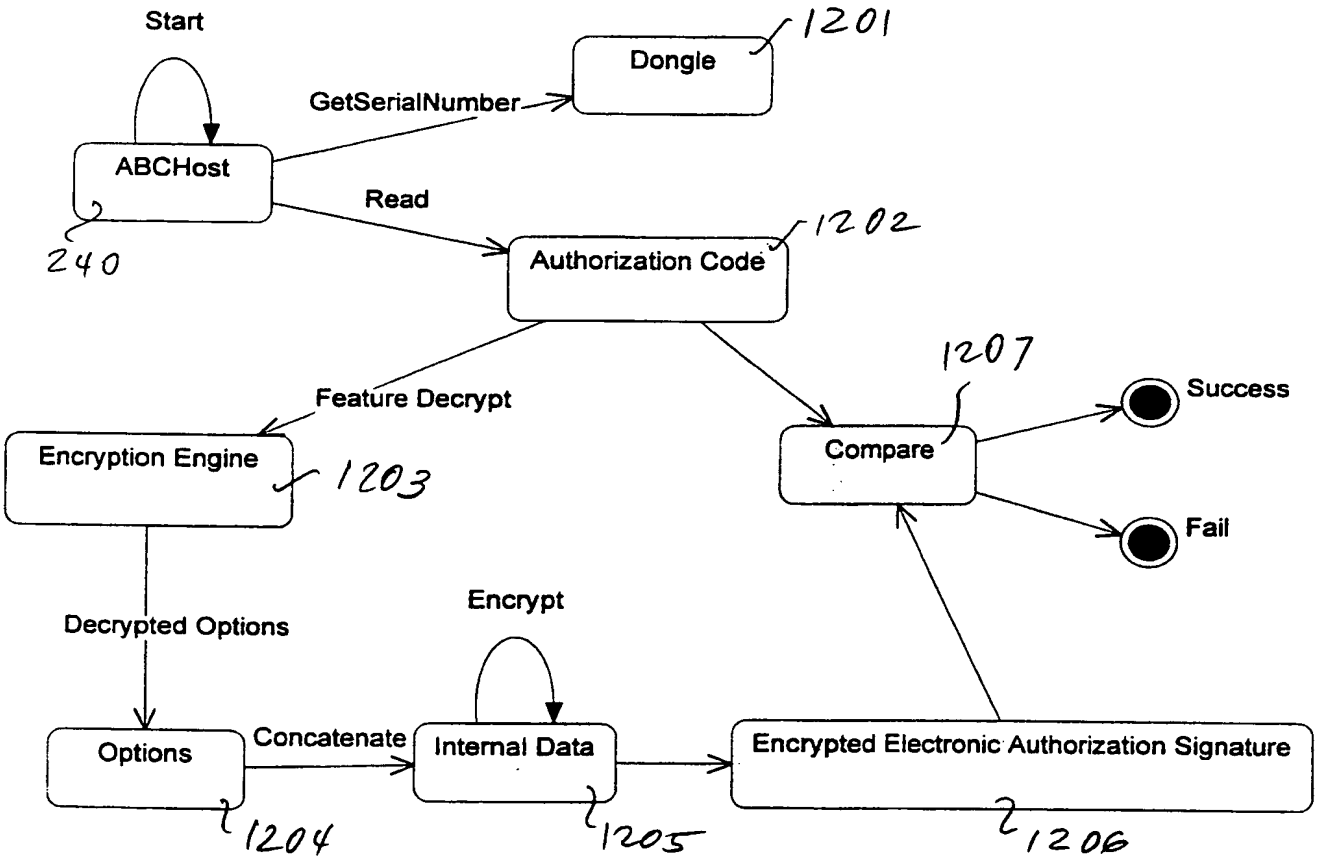

Fig. 12

Standardization Validation

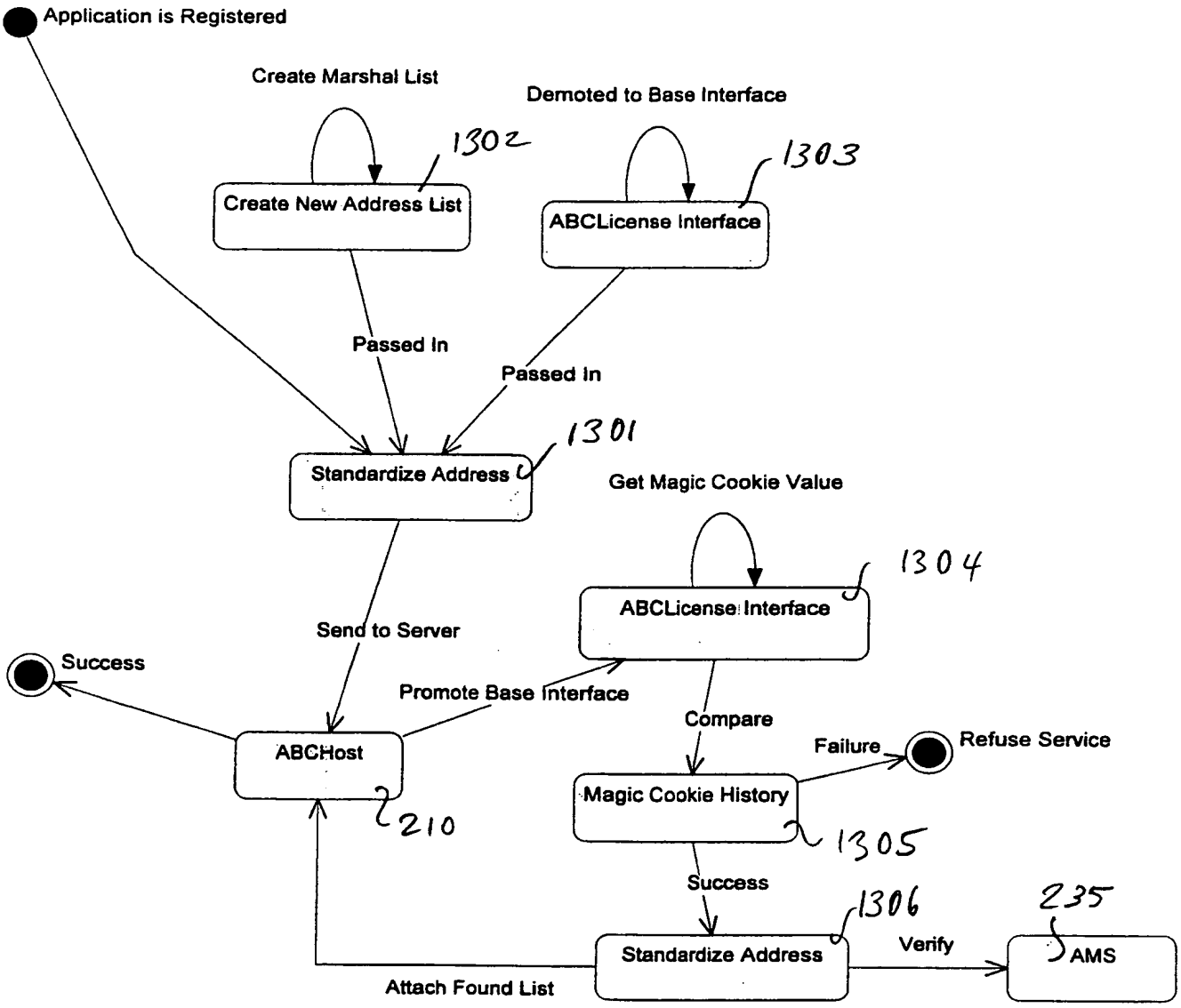

Fig. 13

Register License

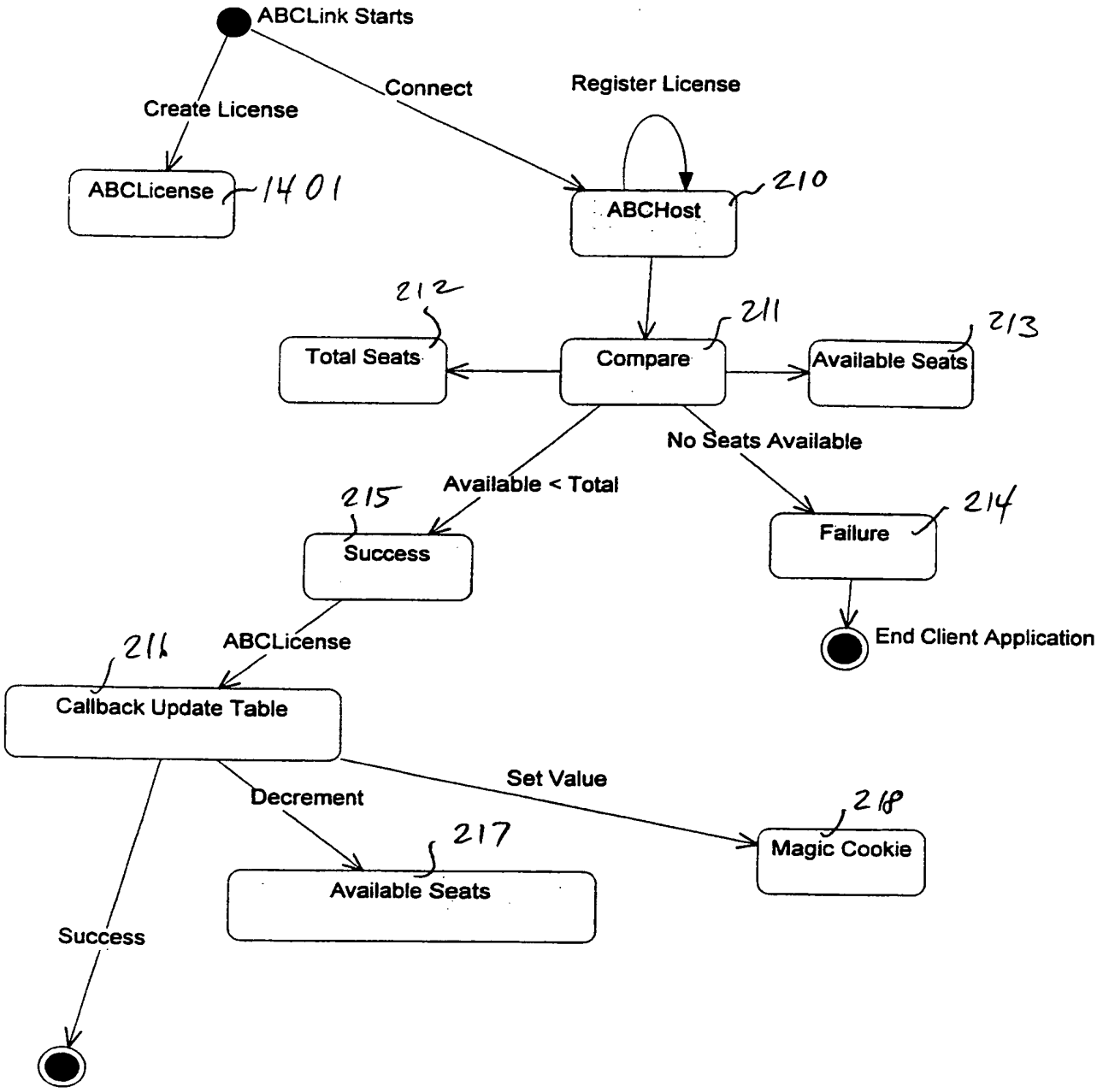

Fig. 14

Seat Feature Enforcement

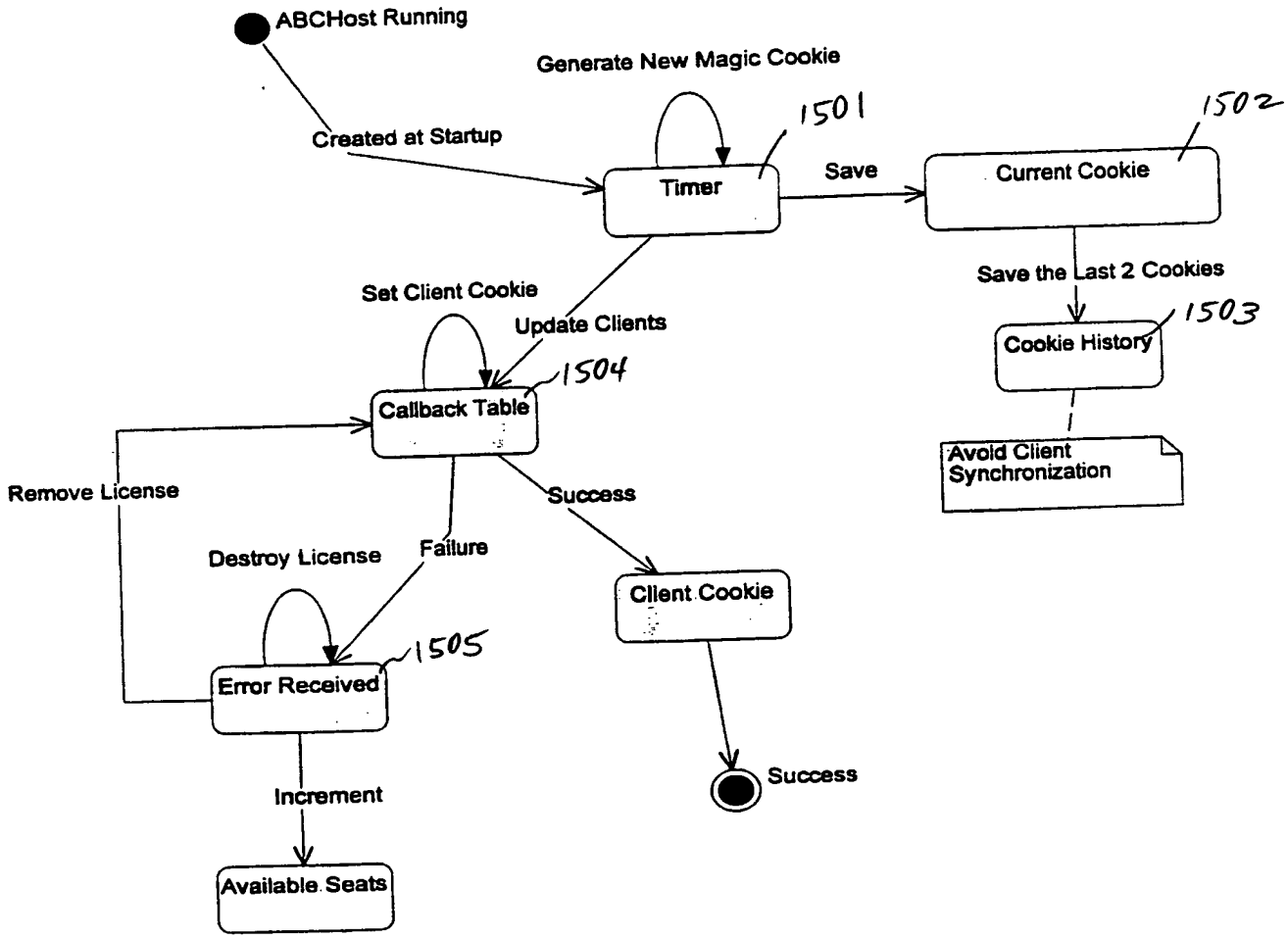

Fig. 15

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/25508

A. CLASSIFICATION OF SUBJECT MATTER
IPC(6) :G06F 153/00
US CL :705/401
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/401, 402, 408

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,262,939 A (VANPOUCKE) 16 NOVEMBER 1993, SEE ABSTRACT AND COLUMN 3, LINE 30 TO COLUMN 4, LINE 63.	1-9, 21-29
X --- Y	US 5,668,990 A (BAJORINAS ET AL.) 16 SEPTEMBER 1997, SEE ABSTRACT AND COLUMN 4, LINE 56 TO COLUMN 6, LINE 33.	10-20, 30-40 ------ 1-9, 21-29

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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CORRECTED VERSION*

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(74) Agents: YIP, Alex, L. et al.; Londa and Traub LLP, 37th floor, 20 Exchange Place, New York, NY 10005 (US).

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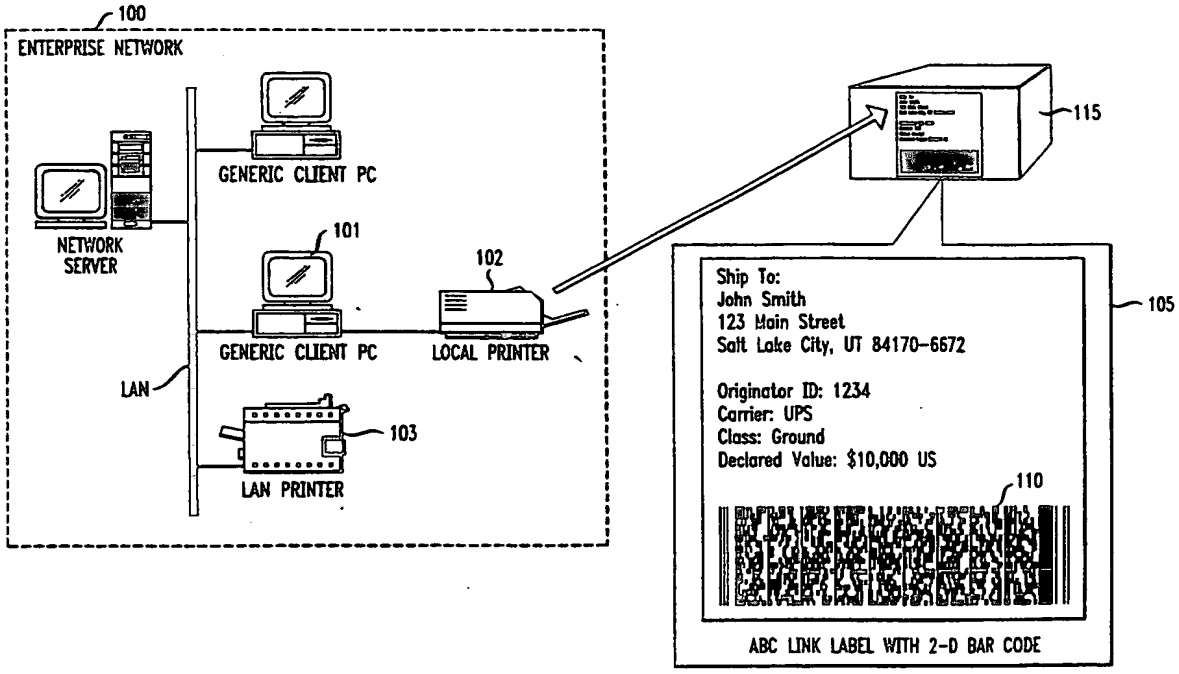
(54) Title: METHOD AND SYSTEM FOR SHIPPING/MAILING



(57) Abstract

An efficient and errorfree processing of shipping/mailing information is fostered by reducing manual work and by validating the information. A user at terminal (101) generates barcode (110) including encrypted shipping information is generated at an enterprise network site (100) for processing a mail piece (115). The label (105) is placed on the mail piece (115) for forwarding to mail center (103). Shipping/mailing center (103) includes a terminal (125) which converts the shipping information into the appropriate format of the selected carrier. Terminal (125) then instructs thermal printer (13) to print a shipping label (135) affixed to mail piece (115).

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Description

METHOD AND SYSTEM FOR SHIPPING/MAILING

Technical Field

The invention relates to shipping/mailing techniques, more particularly utilizing distributive computerized technology.

Background of the Invention

Many offices/organizations process large numbers of mail pieces or parcels and utilize different shipping or mailing carriers such as the United States Postal Service (USPS), United Parcel Service (UPS), Federal Express (FedEx), RPS and DHL, for example. For each mail piece, the carriers require shipping/mailing information including the delivery address and, typically, further instructions such as the class of service, for example.

The required information may be supplied by manual entry, e.g. using the carrier's proprietary software. Such entry tends to be inefficient and error prone.

Summary of the Invention

The present invention aims at more efficient and error-free processing of shipping/mailing information. Measures are taken for reducing manual work and validating the information, including utilization of optical scanning, character recognition (OCR) and bar codes, and reference to standard address databases in a distributive-processing technique, e.g. client-server or peer-to-peer.

In addition to the addressee, a user of the technique may specify the carrier and/or a class of service to be used for delivery. Alternatively, choice of a delivery option can be provided automatically, based on predefined rules. At a user site, delivery information may be entered by typing, by importing from a personal or public database/list, or by scanning by an optical character recognizer (OCR), for example.

An entered delivery address can be checked against the USPS Address Matching System (AMS) database to verify its validity. If the address fails to check out, possible valid addresses can be offered automatically for the user's consideration. Automatically also, addresses can be standardized, e.g. as to font and format, and for readability. Additional data may be appended, e.g. an internal billing code and/or a tracking ID.

Shipping/mailing data as provided or generated can be printed onto a label or other suitable medium, readable to a human and/or in an encoded form, e.g. a 2-dimensional bar code as based on a 2-D symbol standard such as PDF-417 or Data Matrix, for example. With the label affixed, e.g. detachably, a parcel or mail piece is ready for forwarding to a shipping/mailing room/location.

Preferably, with the label including a bar code, shipping/mailing information can be scanned for automated processing at the shipping location, to print the selected shipper's actual shipping label and postage if required. To facilitate tracking, the shipping/mailing information may be uploaded to the shipper, e.g. to UPS Online.

Brief Description of the Drawing

Fig. 1 is a diagram illustrating mail piece origination.

Fig. 2 is a diagram illustrating mail piece processing at a shipping/mailing center.

Fig. 3 is an example of a computer opening/main screen view in mail piece origination.

Fig. 4 is a diagram of a distributive network as can be used in mail piece origination, including address validation and standardization.

Fig. 5 is a schematic for shipping/mailing address validation and standardization.

Fig. 6 is a state diagram for automated shipping/mailing address standardization.

Fig. 7 is a data flow diagram for automated address printing.

Fig. 8 is a state diagram for automated label generation.

Fig. 9 is a state diagram for automated address database importing.

Fig. 10 is a state diagram for automated address standardization and validation.

Figs. 10 and 11 are state diagrams for revenue protection.

Fig. 12 is a state diagram for automated feature authorization.

Fig. 13 is a state diagram for automated safeguarding against unauthorized access to address standardization/validation.

Fig. 14 is a state diagrams for automated license registration.

Fig. 15 is a state diagram for automated seat feature enforcement.

Detailed Description

Features as described herein with reference to the drawing have been implemented in an exemplary system here designated as Addressing and Bar Code (ABC)

Link/Host. The features are not required all to be included in a single embodiment of the invention, but can be used individually or in any suitable combination within various preferred embodiments. Conveniently in implementation, a suitable programming language is used, e.g. C++.

Figs. 1 and 2 illustrate over-all processing in shipping/mailing, e.g. at a large office facility. Specifically, Fig. 1 illustrates origination or generation of mail pieces at an enterprise network 100, and Fig. 2 their processing at a shipping/mailing center 103 where the mail pieces are further processed to shipping carriers such as the Post Office, UPS, RPS, FedEx and DHL, for example.

Fig. 1 shows a label 105 comprising a bar code 110, generated at a enterprise network site 100 for processing a mail piece 115. A user at a terminal 101 of the site 100 enters shipping information for the mail piece 115, such as shipping destination, originator identification, carrier, shipping class and declared value of the contents. The shipping information is encrypted and included in the bar code 110 on the label 105. The bar code 110 may be based on the PDF-417, Data Matrix, or other 2D-symbol standard. The label 105, which includes the entered shipping information and the bar code 110, is printed on a network or local printer of the site 100, and placed on the mail piece 115 for forwarding to the center 103 of Fig. 2 for shipping/mailing.

Fig. 2 shows the bar code 110 for the mail piece 115 being read using a bar code scanner 120 connected to a terminal 125 at the shipping/mailing center. The terminal 125 has suitable bar code recognition and decryption software for extraction and decryption of the shipping information from the bar code

110. The terminal 125 converts the shipping information into the appropriate format of the carrier selected for the mail piece 115. The converted information is uploaded to the shipping software of the selected carrier, e.g. UPS Online, and the terminal 125 instructs a thermal printer 130 to print a shipping label 135 for use by the carrier. With the shipping label 135 affixed, the mail piece 115 is ready for processing by the selected carrier.

Fig. 3 shows a graphical user interface (GUI) or screen display for processing at the terminal 101, with shipping by the USPS being shown as an example. The display resembles typical text processor screens, including a row 151 of menu buttons, a row 152 of icons, a shipping class display 153 as selected by one of the click tabs 154, here for the USPS, an address text display 155, a special services selection display 156, an originating department information display 157, a multiple-label button 158, a print button 159, an address book access button 160, a "remove" button 161 and a shipping directions button 162. Functions are actuated and controlled by typing, and by familiar clicking on buttons, tabs and icons.

It has been recognized that the use of conventional bar codes for the labels generated at network 100 for processing at a shipping/mailing center 103 may be susceptible to fraudulent circumvention. For example, a conventional bar code on label 105 might be readable by an unauthorized, conventional bar code reader. The use of unauthorized systems and components may undermine the integrity and performance of the shipping process.

As a countermeasure, the shipping information for the mail piece 115 is encrypted before it is used to generate the bar code 110. The terminal 125 includes a

decryption algorithm for the data read by the bar code reader 120 from the bar code 110. Unauthorized systems, without the decryption algorithm will be unable to process the encrypted shipping information from the bar code 110.

Further to deter the use of unauthorized equipment at shipping/mailing room center 103, the shipping address and information for a mail piece can be shuffled in accordance with a predetermined shuffling algorithm prior to encryption. For example, the order of first and last names of a recipient may be reversed prior to encryption. At the mailroom terminal 125, a rearrangement algorithm will then undo the shuffling. Shuffling and rearrangement algorithms can be updated periodically to prevent their discovery upon inspection of the shuffled shipping information.

While use of the scanner 120 eliminates the likelihood for error in transferring the shipping information onto the shipping label 135, without further validation there remains a concern with error at the source, e.g. a user at the terminal 101 entering erroneous shipping information. A resulting invalid shipping address may remain undetected until the carrier fails to deliver the mail piece 115. This concern can be minimized by measures as follows:

Fig. 4 shows a user network 100 for use with Windows NT, featuring address validation using a database provided by the USPS, with validation being facilitated by standardizing addresses as to their format. The USPS address database service, known as its Address Matching System (AMS), includes on a CD-ROM all valid U.S. addresses in a standardized format. Updated versions are provided periodically under a license agreement.

The network 100 comprises a network server 200 and a network hub 205, providing network services to

client terminals 210, 215, 220, and 225. The network 100 may be a packet-switched network for transporting information in accordance with the standard transmission control protocol/internet protocol (TCP/IP). Remote access is provided for terminal 225 by a dial-up/Internet connection through the modem 230.

Windows operating systems, e.g. Windows 95, 98 or NT are installed at the server 200 and terminals 210, 215, 220 and 225 for communicating amongst one another. Further installed at the terminals 215, 220 and 225 is software here designated as ABC Link and, at the terminal 210, software designated as ABC Host. The latter includes an AMS capability for making use of the AMS CD in a CD-ROM drive 235. A hardware key 240 is connected at a communication port of the terminal 210, representing a contractual safeguarding element.

For the host terminal 210, use of Windows NT is advantageous in that it provides a launch service that keeps ABC Host running even in the absence of any current demand for shipping/mailing address processing. Thus, there will be no need for start-up when demand arises. For operating systems that do not provide such a service, e.g. Windows 95 and 98, a launcher application can be provided in the host terminal 210 for the same purpose. The launcher application can be included automatically at the time ABC Host is installed at the terminal 210.

Installation and other auxiliary software for Link/Host can be stored at the network server 200 or any of the client terminals 210, 215, 220, or 225. Instead of at one of the terminals, such as the terminal 210, ABC Host can be installed at the server 200. Conversely, while Fig. 4 shows a client-server configuration, ABC Link/Host can be implemented in the absence of the network server 200, in a peer-to-peer configuration.

One and the same terminal may include ABC Host as well as ABC Link, e.g. the remote client terminal 225 in Fig. 4, with a corresponding additional subscription to ABC Host. In this case, the ABC Link at the terminal 225 may use either its own ABC Host or the one provided via the network

Fig. 5 illustrates shipping/mailing address validation/standardization in ABC Link/Host prior to use in labeling. Shown are two network client terminals 215 and 220, and three Internet client terminals 225-227, all in communication with the host terminal 210. From one of the client terminals, 215, potentially inaccurate or "dirty" shipping/mailing addresses are assembled in a marshaling list 500 for checking against AMS data 510 from the CD ROM 235. The host 210 returns proposed "clean" addresses to the marshaling list 500 for accessing from the client 215.

Without precluding processing of a single shipping/mailing address individually, the marshaling list 500 facilitates processing of addresses in batches. This feature can serve to minimize the number of round-trip communications between the client terminal 215 and the host 210, thereby enhancing processing efficiency.

Fig. 6 illustrates address standardization processing, either to the successful display of an address or to failure. From a client terminal 215, a pre-existing address 601 or a newly entered address 602 can be entered into a marshaling list 603 for submission 605 to the standardizing functionality 606 of the host 210. Submission also activates preparation of a license interface 604. Standardization 606 is contingent on verifications 607 and 608 that the hardware key 240 remains connected at the host 210 and the requirements of the license interface are met. If so, the submitted address list is un-marshaled, 609, the submitted

addresses are copied, 610, for AMS processing 611, a custom-address-marshaling list is prepared for the standardized addresses and is attached to the submitted address list, 612 and 613. The resulting list is unmarshaled, 614, for display.

Fig. 7 illustrates address data flow to printing. Addresses can be created or selected at a module 701, assembled as Array_Addresses 702, copied as Array_AddressSearch 703, AMS-processed, 704, e.g. as shown in Fig. 6, and copied as Array_AddressCorrected 705. As AMS-processing may result in several proposed corrected addresses for one and the same original new address, display at 706 will prompt the user to select the one intended, resulting in Array_AddressSelected 707 and a key index with respect to Array_AddressCorrected 705. Copying of the finally selected addresses yields Array_AddressChosen 708 to which business rules can be applied, e.g. generation of multiples to yield Array_AddressPrint. Final printing can be subject to printing rules, e.g. how many addresses to print per sheet of paper in generating labels.

Fig. 8 illustrates address processing for generating a label. An address 801 can be obtained from the clipboard 802 where it was placed by a different application 803. An address from the clipboard data can be parsed, 804, with different parsing rules 805-809 being applied depending on the number of lines of the address and on the presence/absence of numerals and special characters, for example. An address 801 can be saved in a database 810, preferably after ABC Host services 811 have produced the address as standardized, 812. A preferred carrier and class of service, 813, can be selected for an address 801 or standardized address 812. Printing, 814, can include a 2-dimensional bar code meeting the PDT417 standard, for example.

Fig. 9 illustrates importing of addresses, activated from a menu 901 and involving browsing, e.g. of a text file 902, MVP import 903 or database 904. Options 905 include standardizing 906, creating a category 907 and including in a database 908. A standarzed address 906 can be selected, 910, for inclusion in the category 907.

Fig. 10 shows workstations 215, 220 and 225 with respective licenses 216, 221 and 226. System communications 1001 result in license registration at the server application 1002 which includes a license callback capability for periodic checking on workstations 215, 220 and 225 as to their status under the license. The server application 1002 can check licenses for functionality 1003, and the license can be destroyed, 1004, in case of lack of authorization. The license is destroyed also in case a license callback results in failure, in which case the number of available seats or licenses can be incremented, 1005, at a dynamic license table 1006. A time license rotator 1007 is in communication with the dynamic license table 1005, the server application 1002 and the license callback 1002.

Fig. 11 shows the host 210 starting the clock 1101 for periodically changing the license key 1102. Each time a new license key is chosen, the most recent two keys are saved in a history 1003. Issuance of a new key initiates callback at the callback queuing table 1104 that is informed by the total number of seats 1105 that is also referred to by the host 210 in ending an application if service is requested at too many terminals as compared with the number of licenses. The host 210 further refers to the authorization number 1106 and hardware dongle 1107, which both depend on seat options 1008. The ABC license 1009 is established when the application starts. Before an address standardization

1010 can be effected, the key comparison 1011 has to be successful.

Fig. 12 illustrates feature or functionality authorization at the host 210 for a client 215 whose serial number is obtained from a dongle 1201. An authorization code is read, 1202. An encryption engine 1203 is called on for feature decryption, yielding options 1204. The options 1204 are concatenated with internal data 1205 and encrypted to form an encrypted electronic authorization signature 1206. Authorization is established if, at 1207, the authorization code and the encrypted electronic authorization signature are in agreement.

Fig. 13 illustrates processing of a request for address validation and standardization from a terminal 215. Passed in with a standardization request 1301 are a new address list 1302 and the ABC license interface 1303. The ABC host 210 promotes the base interface to the ABC license interface 1304 and ascertains that the request comes with a current authentication "cookie", or at least by one of the most recent two previous cookies. If so, the request for standardizing is acted on, 1306, by actuating AMS 235.

Fig. 14 illustrates license registration for ensuring that the number of client terminals using the system remains limited at all times by the number of licenses. At the terminal 215, the ABC license 1401 is created. Upon connection to the host 210, the license is registered, and a comparison 211 between the total number 212 of seats and the available or free number 213 of seats. If no seats are available, 214, the requesting application at the terminal 215 ends. If a seat is available, 215, from callback update table 216 the number of available seats 217 is decremented and a cookie 218 is

issued for later, periodic verification that the terminal 215 continues to be in an authorized state.

Fig. 15 illustrates continuing seat feature enforcement. Periodically, e.g. every 2 minutes per timer 1501, a new cookie is generated. The current cookie 1502 is saved, as are the two immediately preceding values, establishing a cookie history 1503. Where the callback table 1504 is updated successfully, the new cookie is forwarded to the corresponding active terminal; otherwise, 1505, the corresponding license is canceled and the number of available seats is incremented, 1506.

Claims

1. A method for shipping/mailing articles comprising the steps of:

generating shipping/mailing data for one of the articles at one of a plurality of client terminals which are linked to a host terminal, wherein generating comprises information transfer between the client terminal and the host terminal; and

producing the shipping/mailing data for generating a shipper's label.

2. The method of claim 1, wherein producing comprises printing the shipping/mailing data.

3. The method of claim 1, wherein producing comprises encoding the shipping/mailing data in a 2-dimensional bar code.

4. The method of claim 1, wherein producing comprises encrypting the data.

5. The method of claim 1, wherein producing comprises shuffling the data.

6. The method of claim 1, wherein generating the shipping/mailing data comprises referring to an electronic address book.

7. The method of claim 1, wherein generating the shipping/mailing data comprises pasting from a clipboard.

8. The method of claim 1, wherein generating the shipping/mailing data comprises selecting a carrier.

9. The method of claim 1, wherein generating the shipping/mailing data comprises selecting a class of service.

10. The method of claim claim 1, wherein generating the shipping/mailing data comprises referring to a database of valid addresses for validation.

11. The method of claim claim 10, wherein referring to the database of valid addresses yields a proposed address.

12. The method of claim 1, wherein generating the shipping/mailing data comprises address standardizing.

13. The method of claim 12, wherein standardizing takes into account how many lines an address has.

14. The method of claim 10, wherein referring to a database is effected for a batch of addresses.

15. The method of claim 1, wherein an application for servicing the client terminals keeps running even in the absence of a request from a client terminal.

16. The method of claim 15, wherein the host terminal has a launcher application for keeping the application running.

17. The method of claim 1, further comprising the host terminal referring to a hardware key for enforcing license compliance.

18. The method of claim 17, wherein license compliance comprises compliance with a maximum number of client terminals being serviced by the host terminal.

19. The method of claim 17, further comprising the host terminal making callbacks to the client terminal.

20. The method of claim 17, further comprising the host terminal allowing a different terminal to fill in for a disconnected terminal

21. A medium comprising computer-interpretable instructions for effecting a method for shipping/mailing articles, comprising instructions for:

generating shipping/mailing data for one of the articles at one of a plurality of client terminals which are linked to a host terminal, wherein generating comprises information transfer between the client terminal and the host terminal; and

producing the shipping/mailing data for generating a shipper's label.

22. The medium of claim 21, including instructions for printing the shipping/mailing data.

23. The medium of claim 21, including instructions for encoding the shipping/mailing data in a 2-dimensional bar code.

24. The medium of claim 21, including instructions for encrypting the data.

25. The medium of claim 21, including instructions for shuffling the data.

26. The medium of claim 21, including instructions for referring to an electronic address book in generating the shipping mailing/mailing data.

27. The medium of claim 21, including instructions for pasting from a clipboard in generating the shipping/mailing data.

28. The medium of claim 21, including instructions for selecting a carrier.

29. The medium of claim 21, including instructions for selecting a class of service.

30. The medium of claim 21, including instructions for referring to a database of valid addresses for validation.

31. The medium of claim 30, wherein referring to the database of valid addresses yields a proposed address.

32. The medium of claim 20, including instructions for address standardizing.

33. The medium of claim 32, wherein standardizing takes into account how many lines an address has.

34. The medium of claim 30, wherein referring to a database is for a batch of addresses.

35. The medium of claim 21, including instructions for keeping an application for servicing the client running even in the absence of a request from a client terminal.

36. The medium of claim 35, including instructions for loading a launcher application.

37. The medium of claim 21, including instructions for the host terminal to refer to a hardware key for enforcing license compliance.

38. The medium of claim 37, wherein license compliance comprises compliance with a maximum number of client terminals being serviced by the host terminal.

39. The medium of claim 37, including instructions for the host terminal to make callbacks to the client terminals.

40. The medium of claim 37, including instructions for the host terminal to allow a different terminal to fill in for a disconnected terminal.

FIG. 1

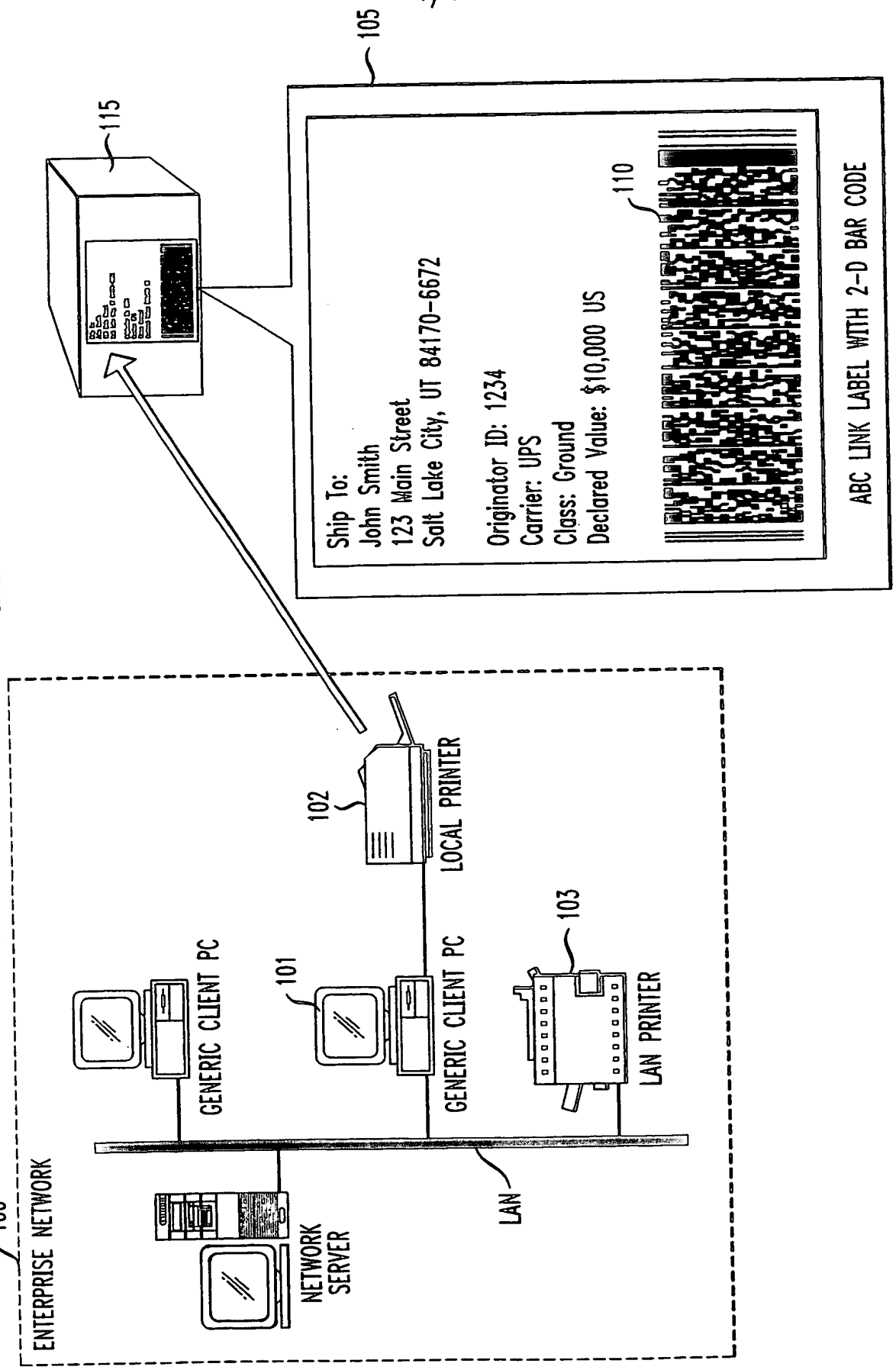
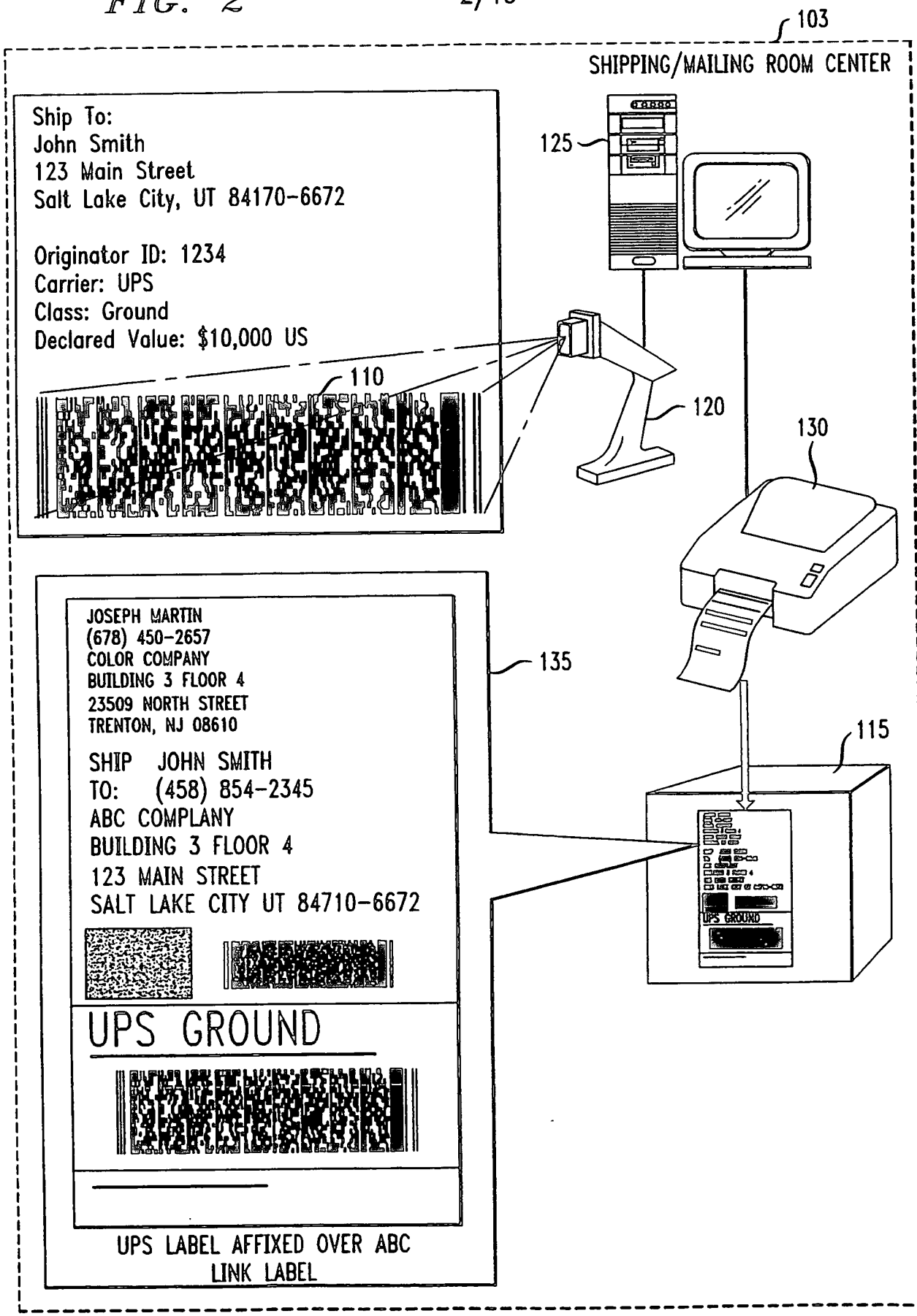

105
115
Ship To:
John Smith
123 Main Street
Salt Lake City, UT 84170-6672
Originator ID: 1234
Carrier: UPS
Class: Ground
Declared Value: $10,000 US
110
ABC LINK LABEL WITH 2-D BAR CODE
102
LOCAL PRINTER
GENERIC CLIENT PC
101
GENERIC CLIENT PC
103
LAN PRINTER
LAN
NETWORK SERVER
100
ENTERPRISE NETWORK

FIG. 2


103
SHIPPING/MAILING ROOM CENTER
Ship To:
John Smith
123 Main Street
Salt Lake City, UT 84170-6672
Originator ID: 1234
Carrier: UPS
Class: Ground
Declared Value: $10,000 US
110
125
120
130
135
115
JOSEPH MARTIN
(678) 450-2657
COLOR COMPANY
BUILDING 3 FLOOR 4
23509 NORTH STREET
TRENTON, NJ 08610
SHIP JOHN SMITH
TO: (458) 854-2345
ABC COMPLANY
BUILDING 3 FLOOR 4
123 MAIN STREET
SALT LAKE CITY UT 84710-6672
UPS GROUND
UPS LABEL AFFIXED OVER ABC
LINK LABEL

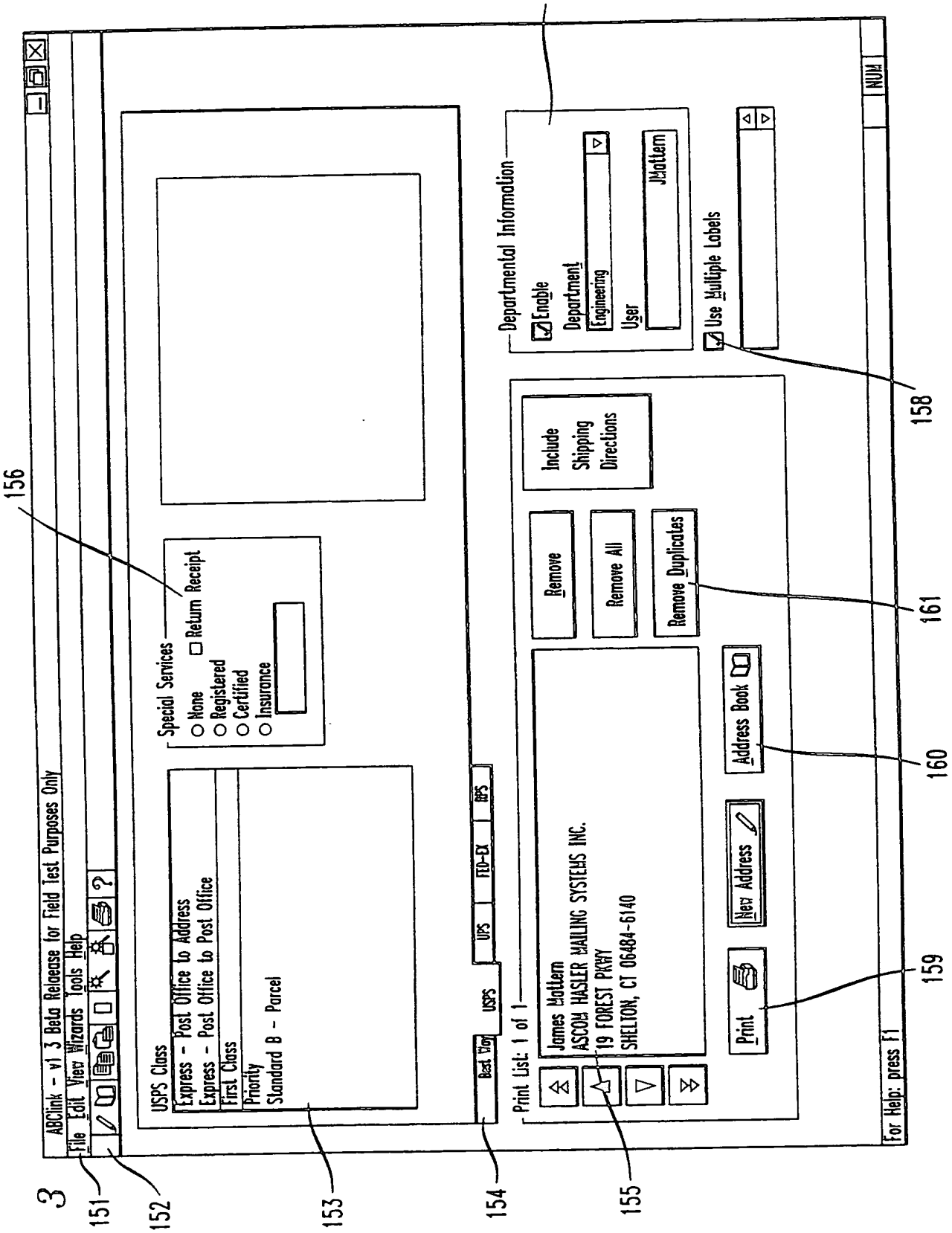

ABClink - v1 3 Beta Release for Field Test Purposes Only
File Edit View Wizards Tools Help
USPS Class
Express - Post Office to Address
Express - Post Office to Post Office
First Class
Priority
Standard B - Parcel
Special Services
None
Return Receipt
Registered
Certified
Insurance
Best Way
USPS
UPS
FED-EX
RPS
Print List: 1 of 1
James Mallem
ASCOM HASLER MAILING SYSTEMS INC.
19 FOREST PKWY
SHELTON, CT 06484-6140
Print
New Address
Address Book
Remove
Remove All
Remove Duplicates
Include Shipping Directions
Departmental Information
Enable
Department
Engineering
User
JMallem
Use Multiple Labels
NUM
For Help: press F1
151
152
153
154
155
156
157
158
159
160
161

FIG. 3

FIG. 4

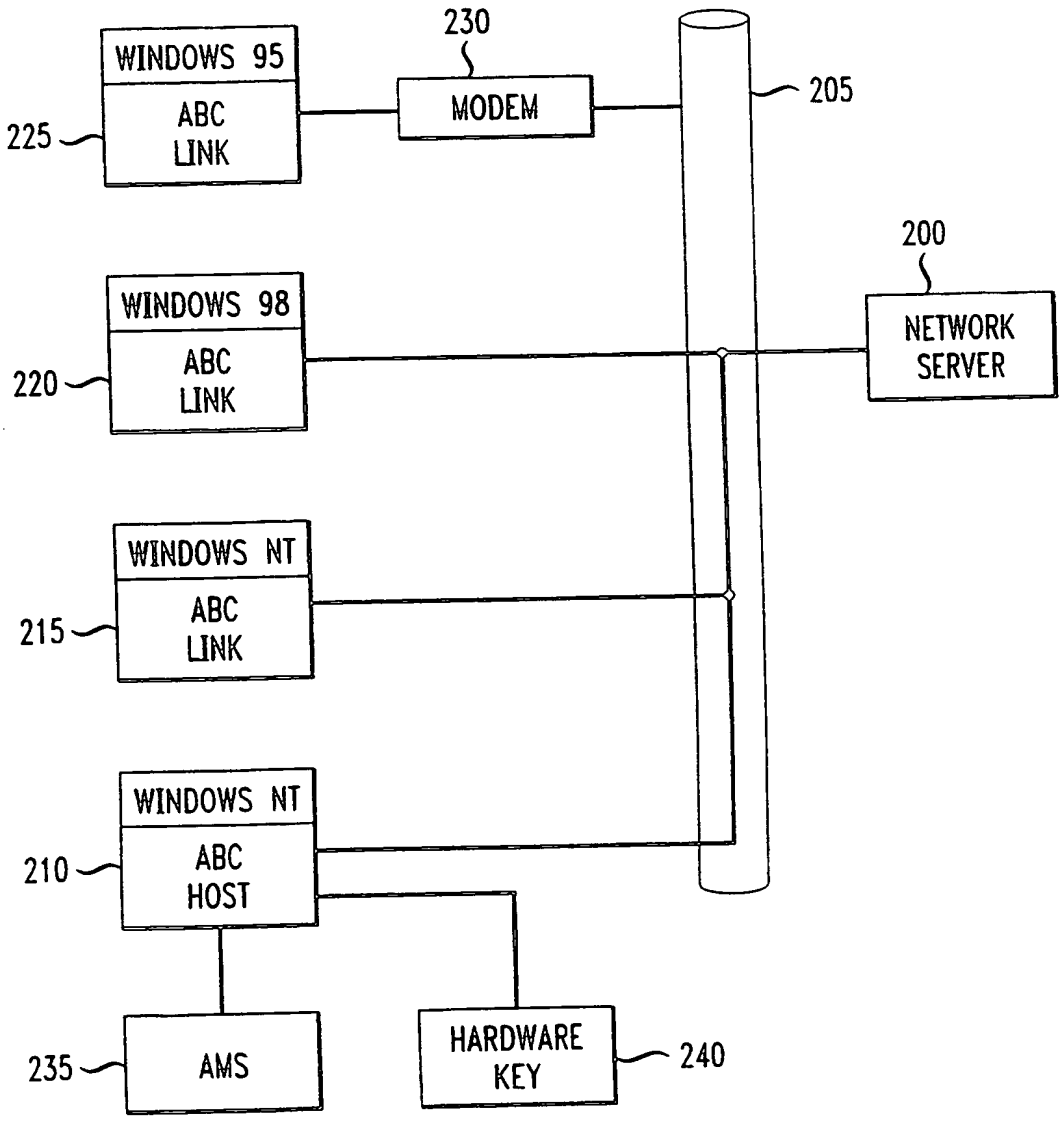

WINDOWS 95
ABC
LINK
225
230
MODEM
205
200
NETWORK
SERVER
WINDOWS 98
ABC
LINK
220
WINDOWS NT
ABC
LINK
215
WINDOWS NT
ABC
HOST
210
235
AMS
HARDWARE
KEY
240

FIG. 5

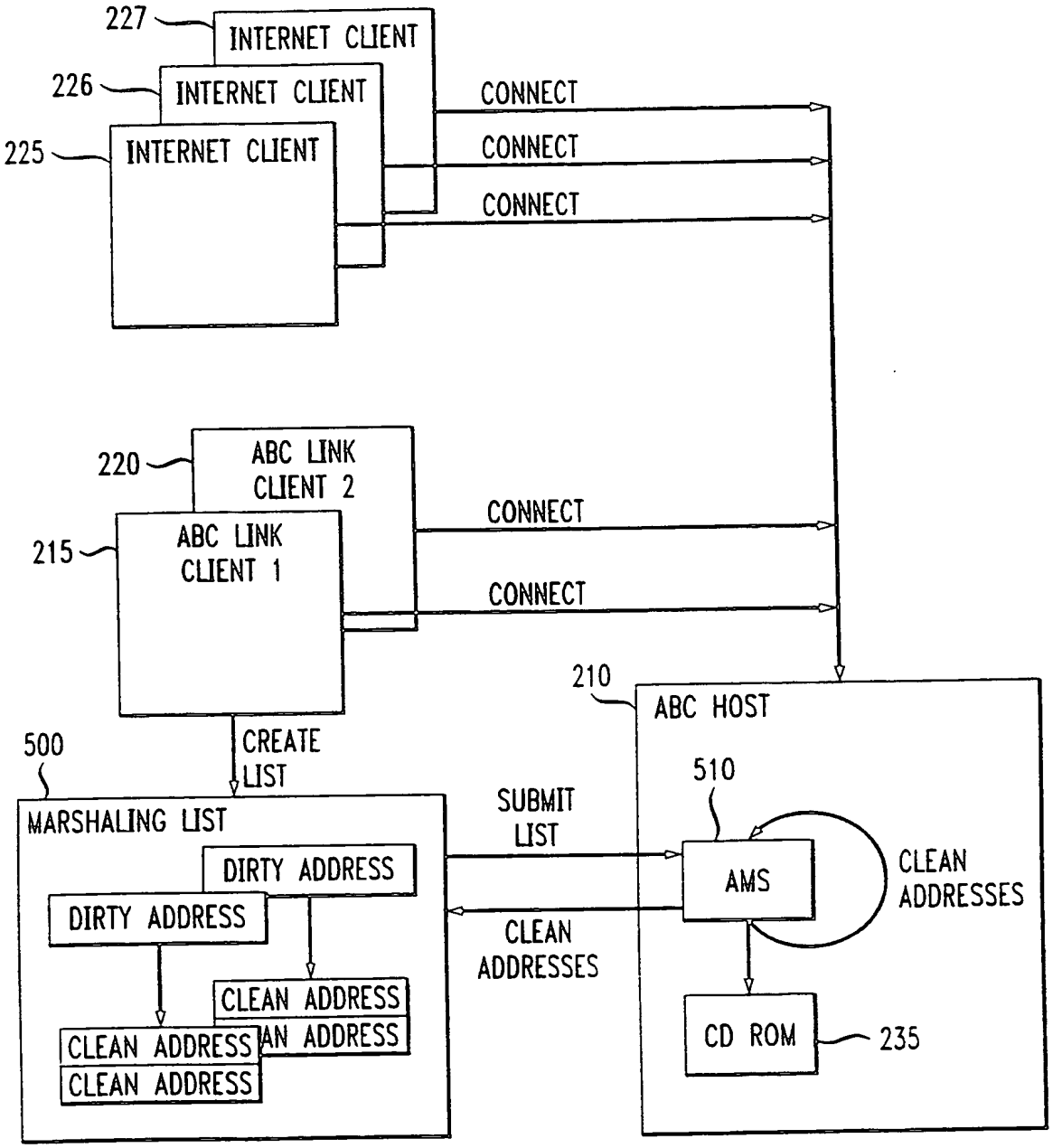

227
INTERNET CLIENT
226
INTERNET CLIENT
225
INTERNET CLIENT
CONNECT
CONNECT
CONNECT
220
ABC LINK CLIENT 2
215
ABC LINK CLIENT 1
CONNECT
CONNECT
210
ABC HOST
500
CREATE LIST
MARSHALING LIST
DIRTY ADDRESS
DIRTY ADDRESS
CLEAN ADDRESS
CLEAN ADDRESS
CLEAN ADDRESS
SUBMIT LIST
CLEAN ADDRESSES
510
AMS
CLEAN ADDRESSES
CD ROM
235

FIG. 6

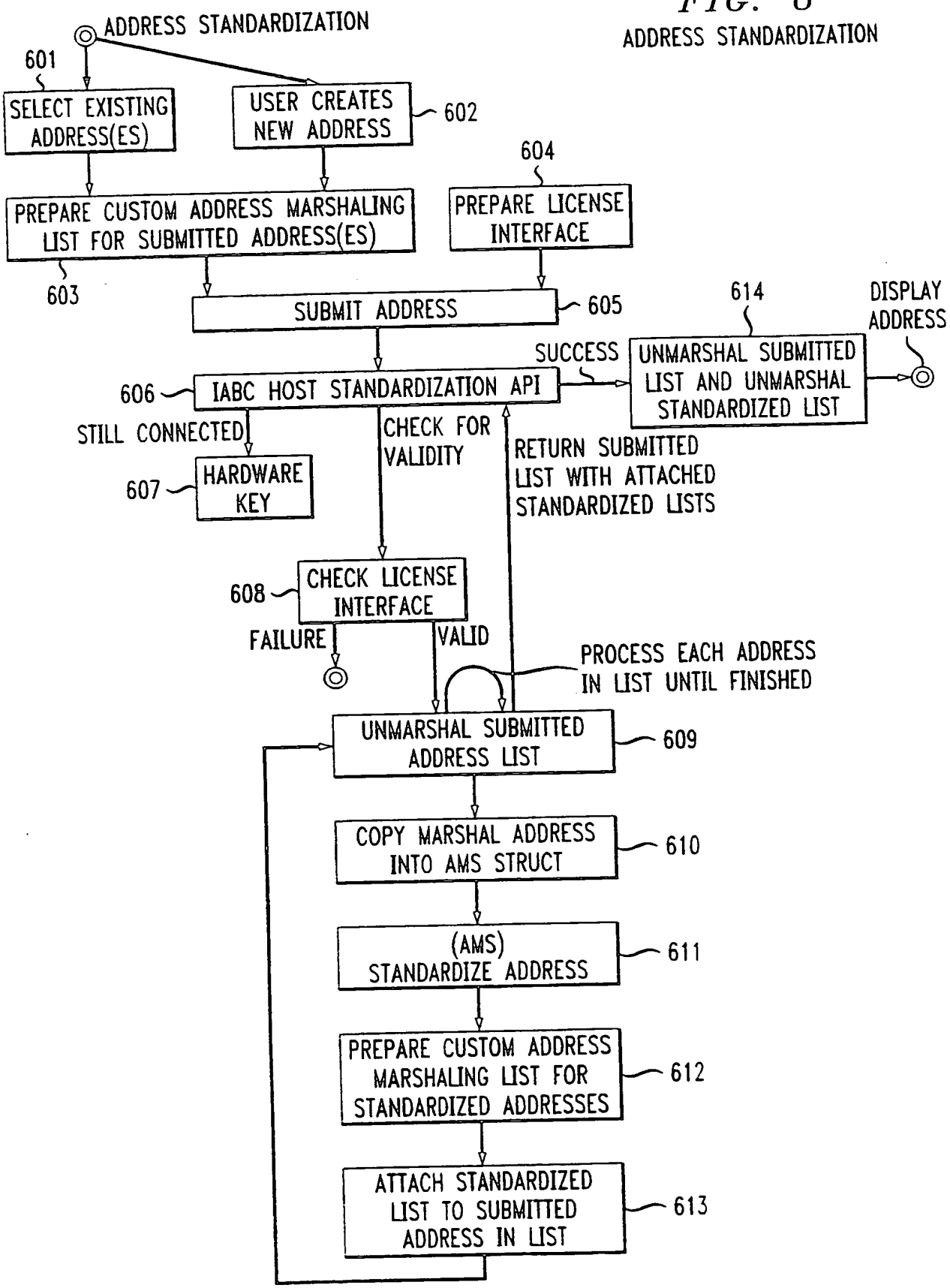

ADDRESS STANDARDIZATION
ADDRESS STANDARDIZATION
601
SELECT EXISTING ADDRESS(ES)
USER CREATES NEW ADDRESS
602
604
PREPARE CUSTOM ADDRESS MARSHALING LIST FOR SUBMITTED ADDRESS(ES)
PREPARE LICENSE INTERFACE
603
SUBMIT ADDRESS
605
614
DISPLAY ADDRESS
SUCCESS
UNMARSHAL SUBMITTED LIST AND UNMARSHAL STANDARDIZED LIST
606
IABC HOST STANDARDIZATION API
STILL CONNECTED
CHECK FOR VALIDITY
RETURN SUBMITTED LIST WITH ATTACHED STANDARDIZED LISTS
607
HARDWARE KEY
608
CHECK LICENSE INTERFACE
FAILURE
VALID
PROCESS EACH ADDRESS IN LIST UNTIL FINISHED
UNMARSHAL SUBMITTED ADDRESS LIST
609
COPY MARSHAL ADDRESS INTO AMS STRUCT
610
(AMS) STANDARDIZE ADDRESS
611
PREPARE CUSTOM ADDRESS MARSHALING LIST FOR STANDARDIZED ADDRESSES
612
ATTACH STANDARDIZED LIST TO SUBMITTED ADDRESS IN LIST
613

FIG. 7

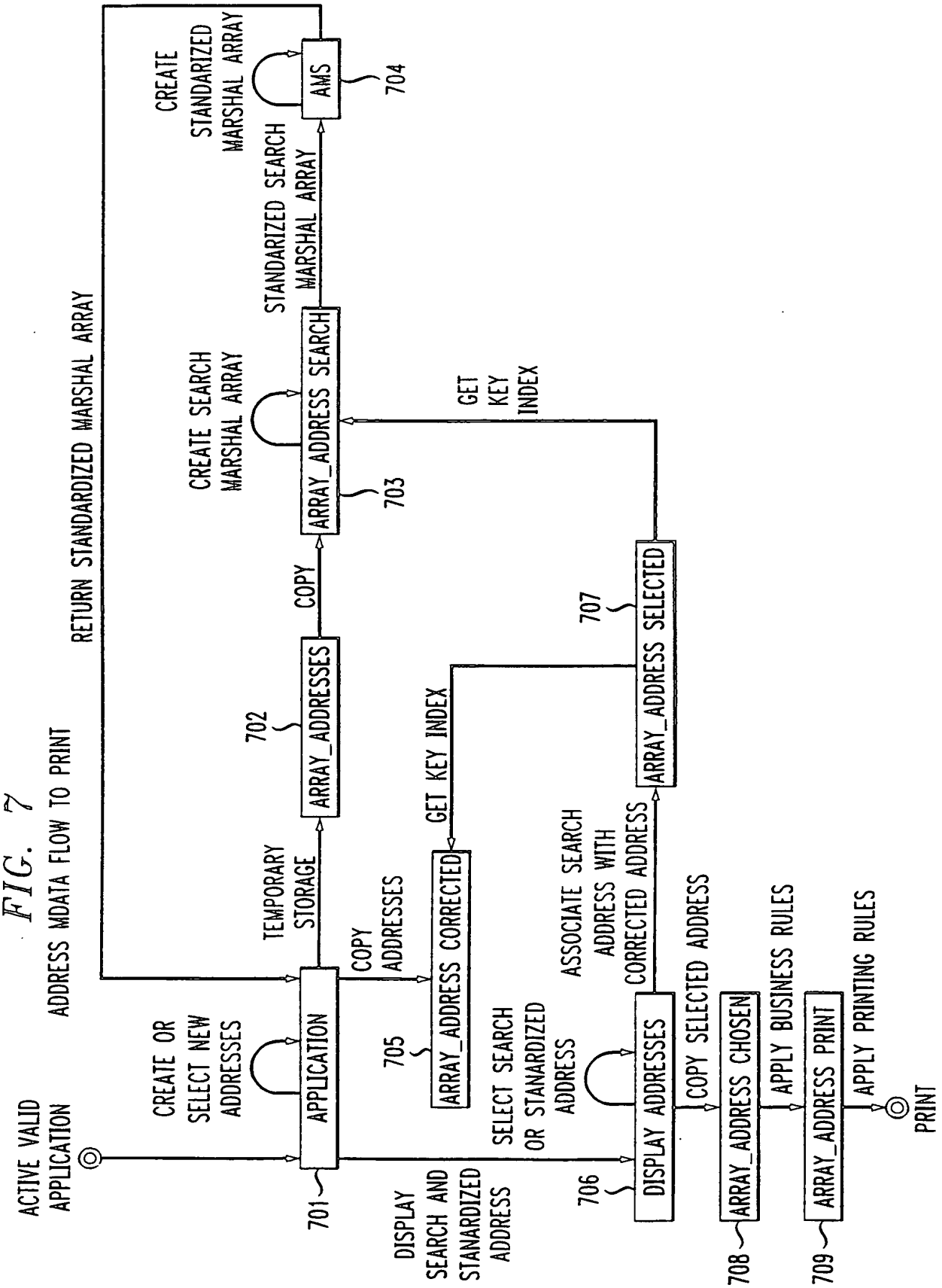

ACTIVE VALID APPLICATION
ADDRESS MDATA FLOW TO PRINT
RETURN STANDARDIZED MARSHAL ARRAY
CREATE OR SELECT NEW ADDRESSES
APPLICATION
701
TEMPORARY STORAGE
ARRAY_ADDRESSES
702
COPY
CREATE SEARCH MARSHAL ARRAY
ARRAY_ADDRESS SEARCH
703
STANDARIZED SEARCH MARSHAL ARRAY
CREATE STANDARIZED MARSHAL ARRAY
AMS
704
COPY ADDRESSES
ARRAY_ADDRESS CORRECTED
705
GET KEY INDEX
GET KEY INDEX
707
ARRAY_ADDRESS SELECTED
ASSOCIATE SEARCH ADDRESS WITH CORRECTED ADDRESS
SELECT SEARCH OR STANARDIZED ADDRESS
DISPLAY ADDRESSES
706
DISPLAY SEARCH AND STANARDIZED ADDRESS
COPY SELECTED ADDRESS
ARRAY_ADDRESS CHOSEN
708
APPLY BUSINESS RULES
ARRAY_ADDRESS PRINT
709
APPLY PRINTING RULES
PRINT

FIG. 8

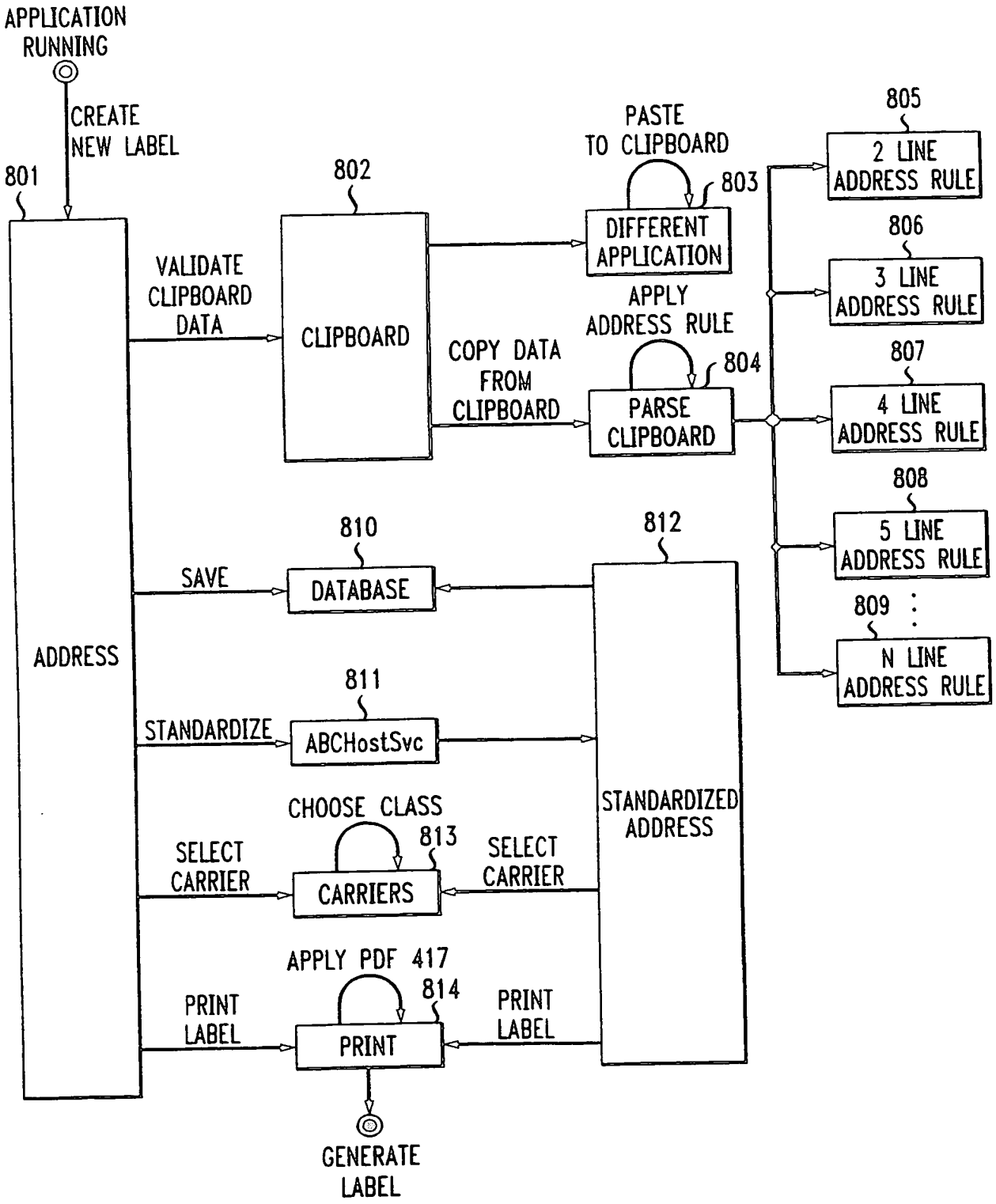

NEW ADDRESS
APPLICATION RUNNING
CREATE NEW LABEL
801
ADDRESS
802
CLIPBOARD
VALIDATE CLIPBOARD DATA
COPY DATA FROM CLIPBOARD
PASTE TO CLIPBOARD
803
DIFFERENT APPLICATION
APPLY ADDRESS RULE
804
PARSE CLIPBOARD
805
2 LINE ADDRESS RULE
806
3 LINE ADDRESS RULE
807
4 LINE ADDRESS RULE
808
5 LINE ADDRESS RULE
809
N LINE ADDRESS RULE
810
DATABASE
SAVE
811
ABCHostSvc
STANDARDIZE
812
STANDARDIZED ADDRESS
CHOOSE CLASS
813
CARRIERS
SELECT CARRIER
SELECT CARRIER
APPLY PDF 417
814
PRINT
PRINT LABEL
PRINT LABEL
GENERATE LABEL

FIG. 9

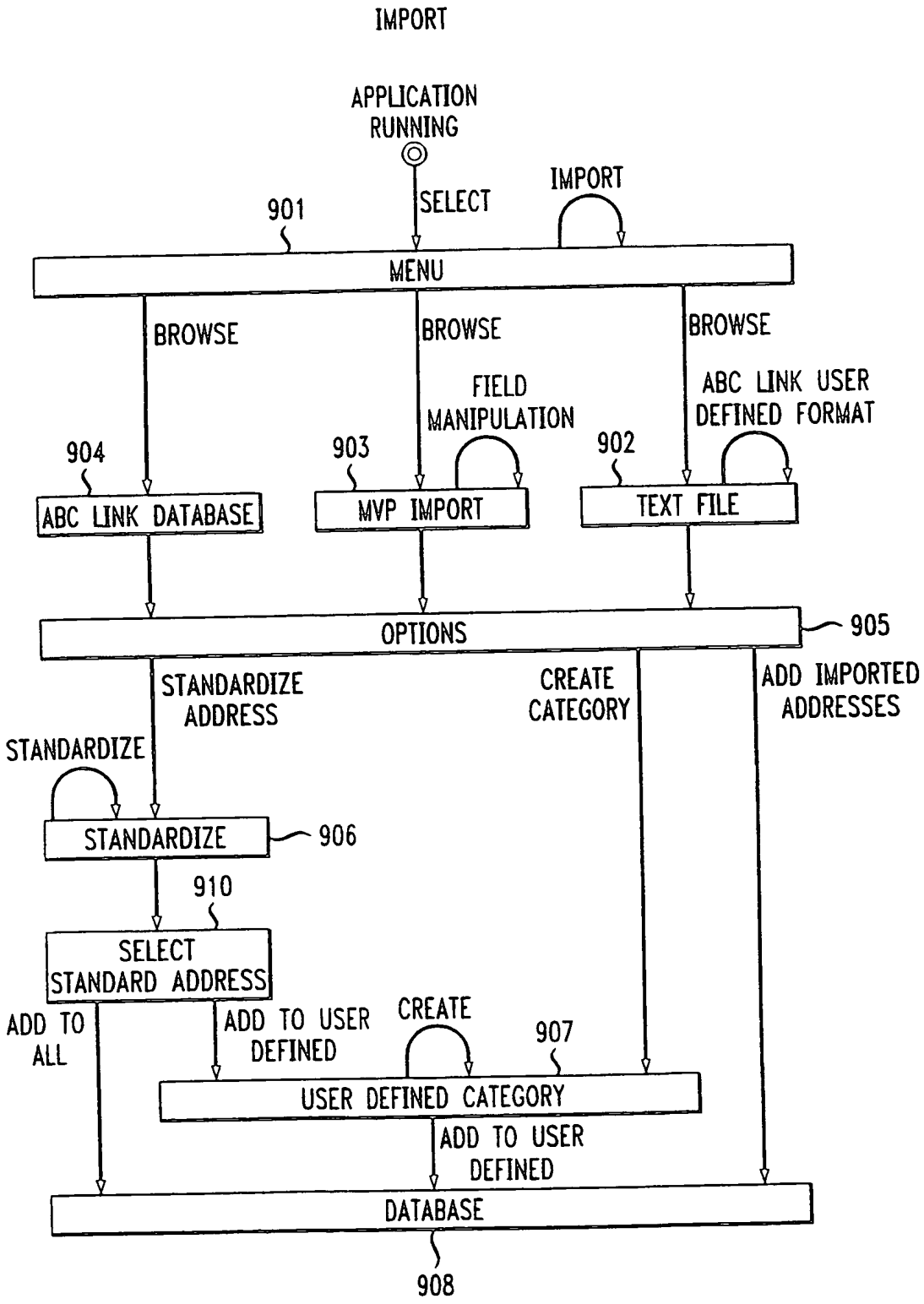

IMPORT
APPLICATION RUNNING
SELECT
IMPORT
901
MENU
BROWSE
BROWSE
BROWSE
FIELD MANIPULATION
ABC LINK USER DEFINED FORMAT
904
903
902
ABC LINK DATABASE
MVP IMPORT
TEXT FILE
OPTIONS
905
STANDARDIZE ADDRESS
CREATE CATEGORY
ADD IMPORTED ADDRESSES
STANDARDIZE
STANDARDIZE
906
910
SELECT STANDARD ADDRESS
ADD TO ALL
ADD TO USER DEFINED
CREATE
907
USER DEFINED CATEGORY
ADD TO USER DEFINED
DATABASE
908

FIG. 10
REVENUE PROTECTION

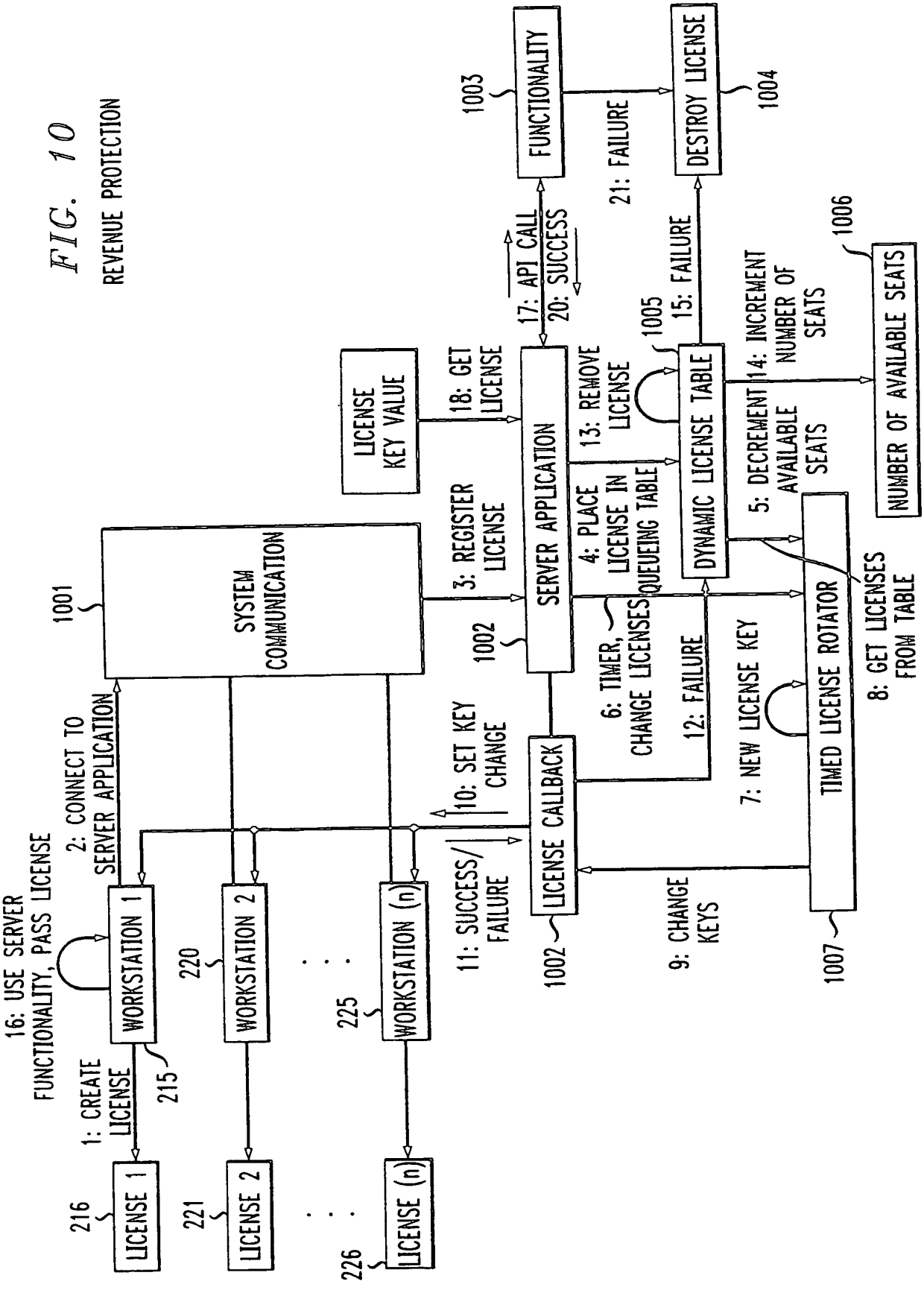


FIG. 11

REVENUE PROTECTION

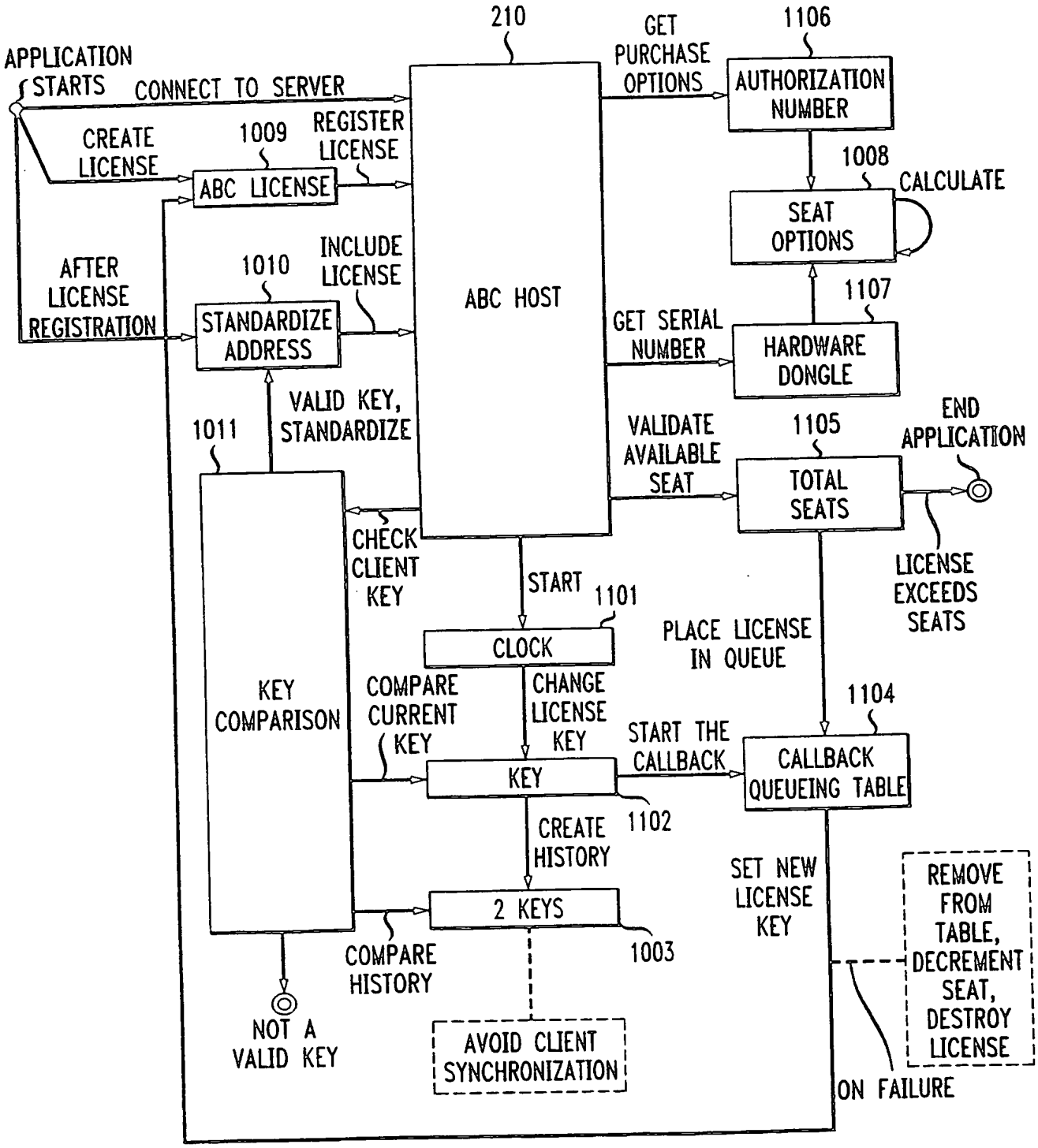


FIG. 12

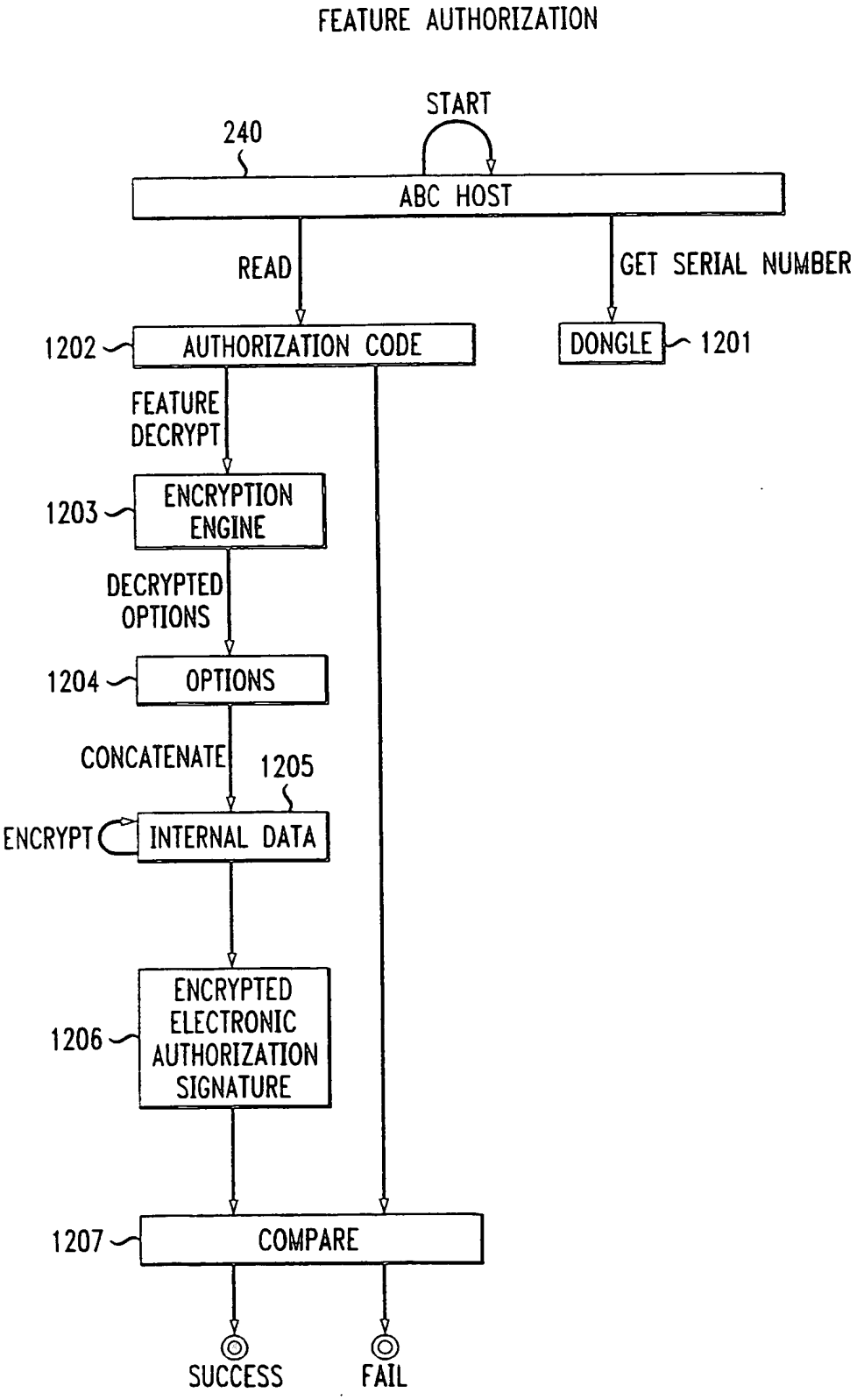

FEATURE AUTHORIZATION
START
240
ABC HOST
READ
GET SERIAL NUMBER
1202
AUTHORIZATION CODE
DONGLE
1201
FEATURE DECRYPT
1203
ENCRYPTION ENGINE
DECRYPTED OPTIONS
1204
OPTIONS
CONCATENATE
1205
ENCRYPT
INTERNAL DATA
1206
ENCRYPTED ELECTRONIC AUTHORIZATION SIGNATURE
1207
COMPARE
SUCCESS
FAIL

FIG. 13

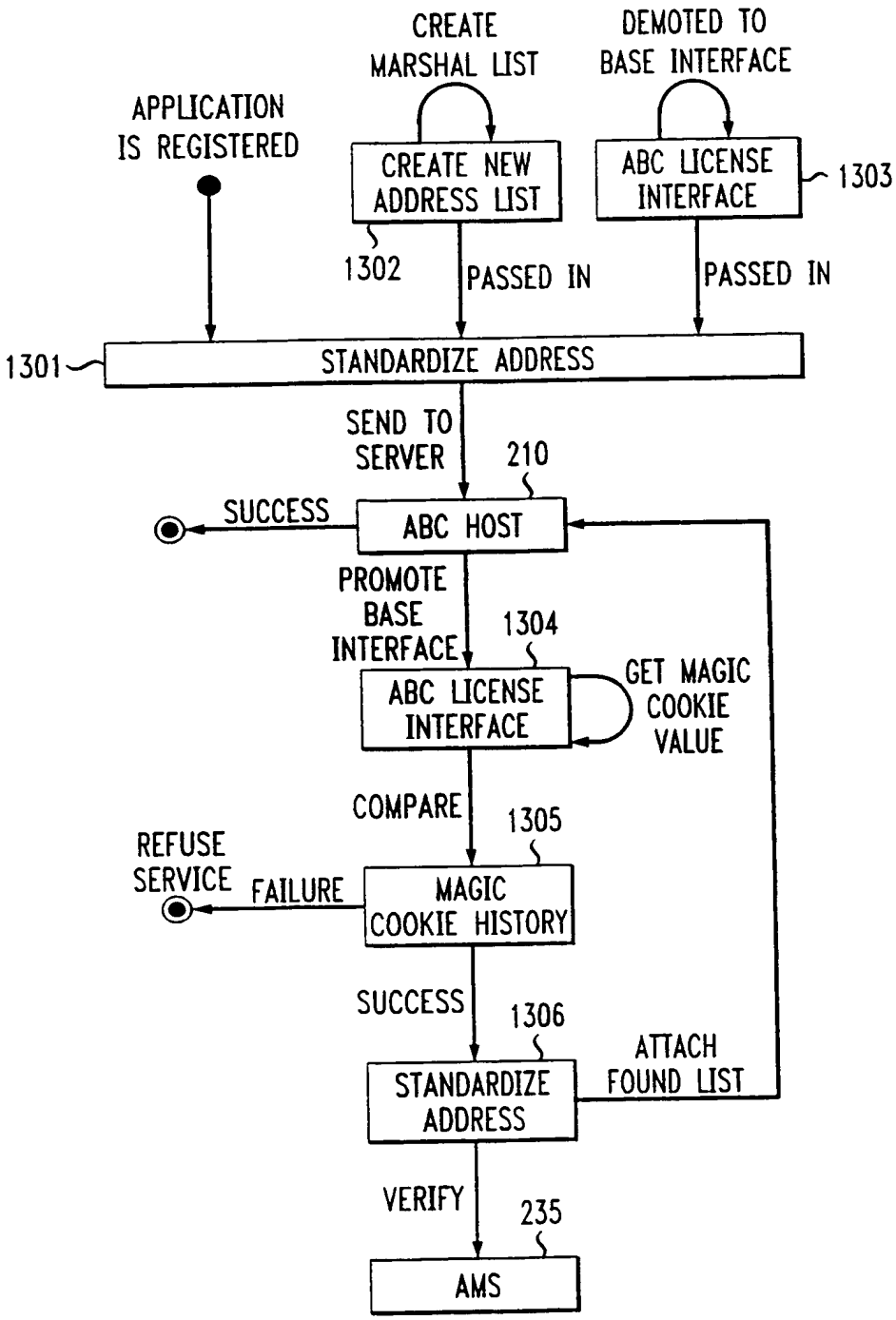

STANDARDIZED VALIDATION
CREATE MARSHAL LIST
DEMOTED TO BASE INTERFACE
APPLICATION IS REGISTERED
CREATE NEW ADDRESS LIST
ABC LICENSE INTERFACE
1303
1302
PASSED IN
PASSED IN
1301
STANDARDIZE ADDRESS
SEND TO SERVER
210
SUCCESS
ABC HOST
PROMOTE BASE INTERFACE
1304
ABC LICENSE INTERFACE
GET MAGIC COOKIE VALUE
COMPARE
1305
REFUSE SERVICE
FAILURE
MAGIC COOKIE HISTORY
SUCCESS
1306
ATTACH FOUND LIST
STANDARDIZE ADDRESS
VERIFY
235
AMS

FIG. 14

REGISTER LICENSE

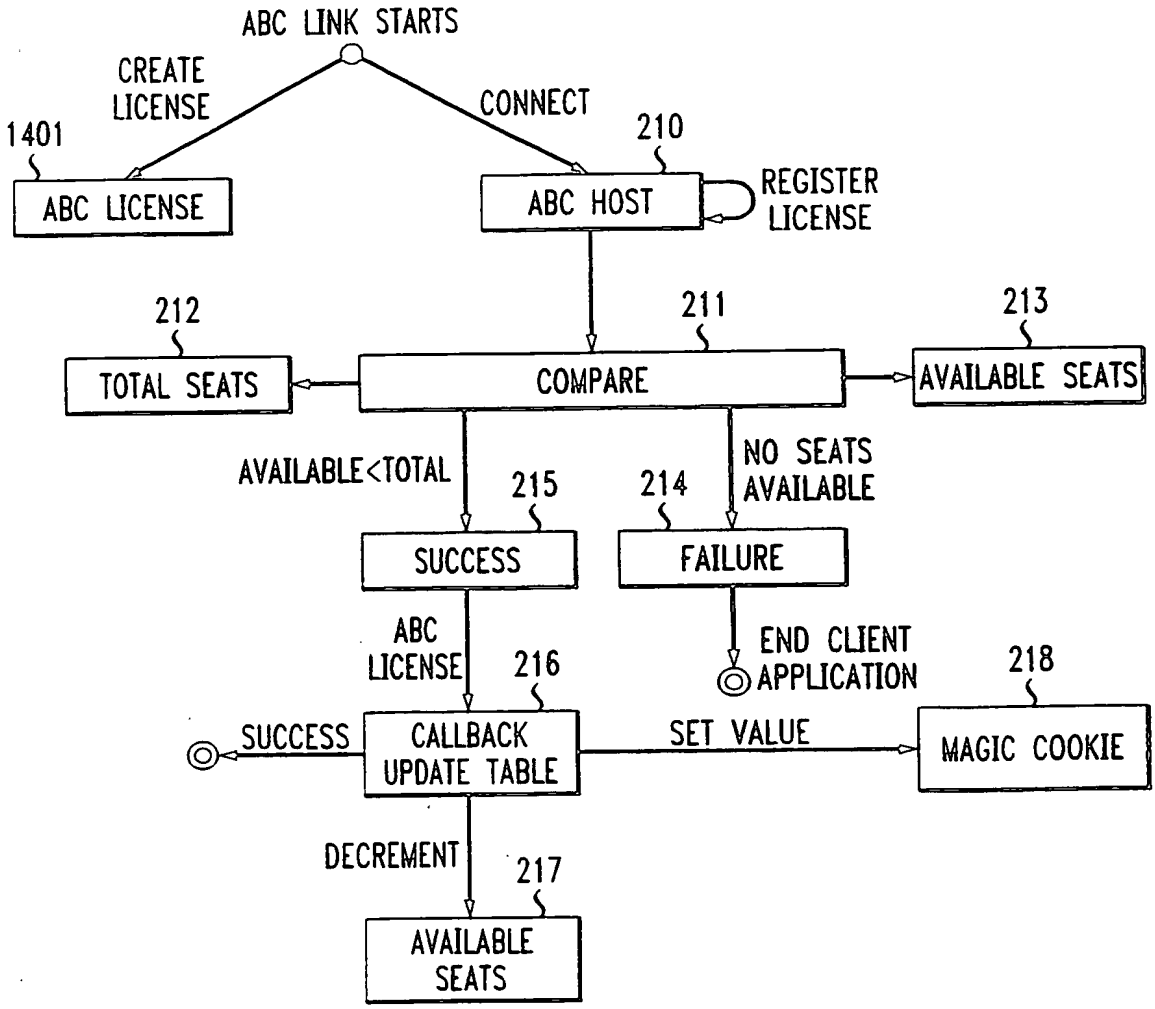
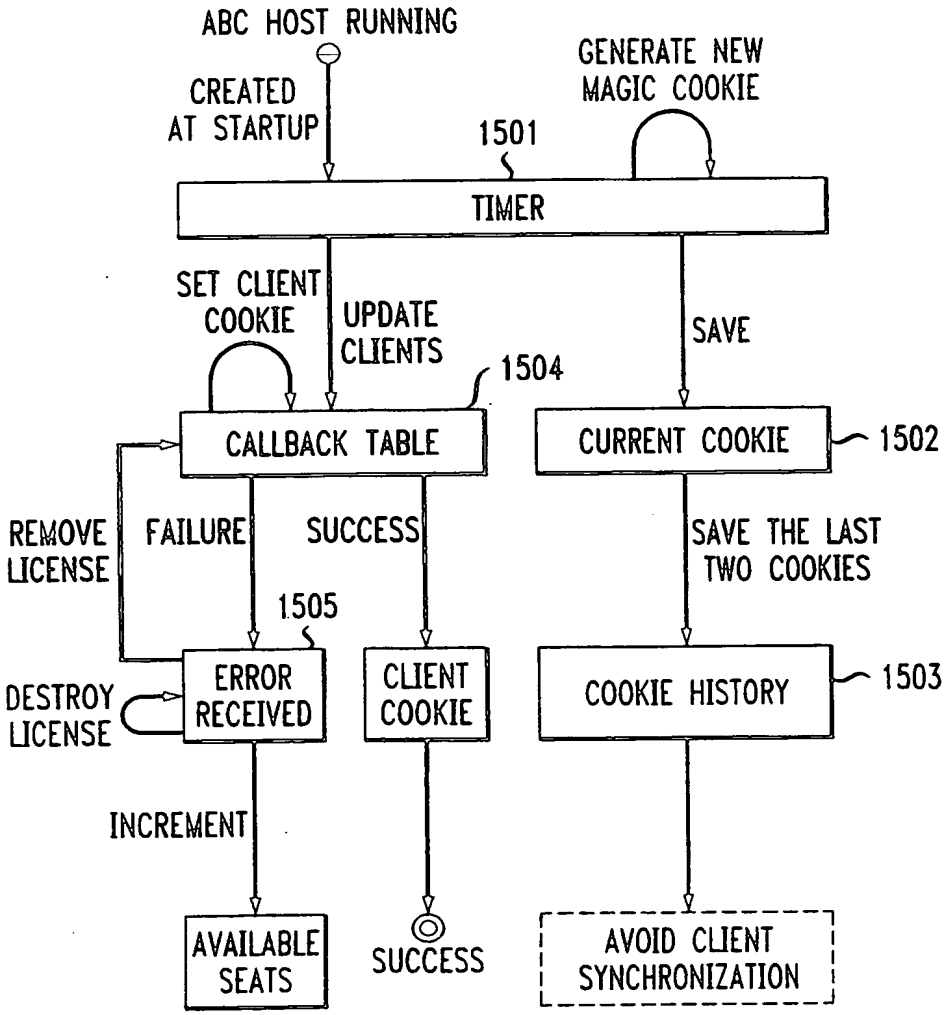


FIG. 15

SEAT FEATURE ENFORCEMENT



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/25508

A. CLASSIFICATION OF SUBJECT MATTER
IPC(6) :G06F 153/00
US CL :705/401
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/401, 402, 408

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,262,939 A (VANPOUCKE) 16 NOVEMBER 1993, SEE ABSTRACT AND COLUMN 3, LINE 30 TO COLUMN 4, LINE 63.	1-9, 21-29
X --- Y	US 5,668,990 A (BAJORINAS ET AL.) 16 SEPTEMBER 1997, SEE ABSTRACT AND COLUMN 4, LINE 56 TO COLUMN 6, LINE 33.	10-20, 30-40 ------ 1-9, 21-29

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"B"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search
29 FEBRUARY 2000

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